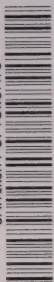


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New Year's Greeting from Our President

TO ALL Canadian dentists and their loved ones I wish health, happiness, contentment and prosperity as we enter the New Year of 1953.

To the Governors and Officers of the Canadian Dental Association I wish courage and perseverance in the accomplishment of their task.

To the readers and friends of our Journal I wish a very Happy New Year.

Gustave Ratté

Québec, Qué.



DR. J. A. TUPPER
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The Journal

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No. 1

Evaluation of the Hydrocolloid Inlay Technique

by JOHN M. GREY, D.M.D., Seattle, Washington

AS practitioners of dentistry we have a common obligation — to bring to the public the skills and knowledge in our field, culminating in a service which makes for betterment of human health. Through the years and with the aid of research we have come to learn that oral health is not a localized condition but rather reflects or initiates a systemic state of health. From the dental point of view it may be said that a healthy mouth is an integral part of a healthy body, whereas a diseased mouth seriously endangers the systemic state. The late Dr. William Mayo said that over 85% of the body illnesses have their origin through the oral cavity. Recognition of these facts makes our position in society clear—that we are treating and should be selling health, not fillings or mouth renovation as such. When methods of treatment and remuneration for such treatment are discussed with the patient, general body health should always be made uppermost in that patient's mind. This mental approach on the part of the dentist will go far in aiding him toward a proper diagnosis as well as promoting patient co-operation.

Proper diagnosis followed by proper methods of treatment, where the field of restorative dentistry is concerned, must assume an ability on the part of the operator to perform. Toward this end we have all invested many years

of education and many thousands of dollars, and it becomes our duty to perform in such a way that the public may receive fullest benefit for their dollar invested with us. Herein lies the basis for research and ultimate progress, and should perfection ever be reached, a wholly improbable situation, surely we would then have worked ourselves out of business, which, in the end, may be said to be our aim. While it is not recommended that plans be made for such a day, it is highly recommended that organized research and, fully as important, that we, as dentists, give full consideration to proven aids designed toward a perfection of oral treatment. Our eyes and ears must be constantly on the alert if we are to wage a winning battle against socialization of the health sciences which would here, as in other countries which have stooped to such a level, seriously hamper, or even put an end to our aim to give quality service.

But to get to the immediate subject at hand—again a product of years of trial and failure, dating back to 1938, altering of equipment and methods, and finally a degree of success—hydrocolloid as we now use it in gold restorations!

It is not my aim only to delve into the equipment use, the time or temperature controls or the means of procedure in the laboratory, but rather to stir up thought in our minds as to

whether such a change in our present method of obtaining impressions and ultimately a finished product fits into our scheme of practice. You will recall the statement that we must keep our minds open and be willing to weigh the relative values of all new aids and I wish now to direct our thinking toward such a consideration.

Now let us assume that agreement has been reached with the patient that we are to replace an upper first molar by means of a fixed bridge and restore carious areas by means of inlays. Now it is left to the dentist to perform, and to do so with maximum skill and minimum discomfort commensurate with quality results. The patient has no conception, or does he care, what work goes on in his absence, but you may rest assured that generally speaking, the more he can be absent the better he likes it. And again, from the operator's point of view, he is in complete agreement. There are perhaps those few of us who prefer to work in the presence of the patient, but for the most part, retiring to the laboratory bench, release from the necessity of completion of an operation by a time designated by the next appointment, and being seated in a comfortable position makes for better work, and, I believe, ultimately greater promise of a tender disposition at the end of a busy day. I guess all of us have heard the thought expressed that a practice of prosthodontia finds much of its remuneration in fewer patients and more time in the laboratory. However, even such a consequence would be of little importance if it necessitated a sacrifice of quality. But as we are giving thought to comfort, we must recognize that the patient likewise benefits in this department as he can now, generally speaking, obtain a two-appointment bridge, or two or three inlays in two appointments. These facts become valuable to the businessman patient whose appointments require that he neglect his duties or must pay someone to substitute on his

job. I truly believe that there is co-operation and appreciation to be gained by making this fact known. Even child care these days becomes an expensive item, alleviation of which is most graciously accepted by the housewife. These are sales-promotion facts and should rightfully be ours to handle with tact.

There is no single item that sells dentistry so effectively as consideration for the patient. Unfortunately there is not such in every office which very often answers the query as to why some practices stagnate while others flourish. This fact knows no bounds, and the wise dentist, seeing his future assured by proper consideration for each and every patient, must in every step of any operation place himself in that patient's position and "do as he would be done by". So we may conclude that if hydrocolloid when used for obtaining impressions accomplishes as good results in a fewer number of appointments and with less effort, and more satisfaction in a job well done to the dentist, it is well deserving of consideration. Now briefly let us see if we may justly arrive at such a conclusion.

FIRST CONSIDERATION FOR PATIENT

As stated earlier our first consideration must be for the patient, so let us imagine ourselves in our chair. The dentist has recommended a fixed bridge, told me that to provide maximum chewing surface; to properly prepare my food for body assimilation; to maintain existing teeth in their proper position in the arch; to avoid drifting of adjacent teeth; to avoid extrusion of teeth normally opposing the missing tooth; to maintain proper facial contour; and generally, due to unnatural movement of teeth and consequent loss of normal contact, to avoid decay of natural teeth, and to thus aid my general body health, that a fixed bridge is most highly recommended. This reasoning makes good sense to me, especially after see-

ing a similar case mounted nicely on casts. I have confidence that he is offering me a service, realizes its value to me, and has given my condition the best professional advice. Now he tells me the cost, which seems fair in view of the service to be performed, and assures me that only *two visits* will be required, and these can be arranged to avoid undue interference with my business schedule. We arrange for manner of payment and now only one thing puzzles me: I'm sure that the other bridge I have, yes, and my wife's too, required some 4 or 5 appointments, so I enquire and learn that the use of a recently developed material enables the dentist to do much of my work in his laboratory in my absence. This fact, believe me, I appreciate. I know he is not taking a short cut at my expense but rather is giving me the benefit of improvements that have been made in the profession.

Now, these advantages as seen through the eyes of the patient are of consequence only so long as dental standards are maintained through the continued production of restorations and appliances embodying all of the essential dental requirements. I refer to function, aesthetics, dental anatomy, well-adapted margins and above all, proper preparation of the cavity. Acceptance of any technique for use in an ethical practice must enable the operator to achieve these features, or any added comforts to the patient or fewer appointments become worthless.

As dentists we have all tried and tested the various methods for obtaining impressions. It is unnecessary to list the many types of material recommended for that purpose, but over a period of years each of us has concluded that in our hands one or another particular material has given us the best results. Likewise each of us has determined that a direct, indirect, or, in some cases an indirect-direct method best fulfils our need. A routine of procedure has been established

and hundreds of inlays done to our satisfaction, but, I repeat, we must not become blind to consideration and a fair trial of any possible means for improvement. It is my experience that use of hydrocolloid, as is true of any new material, requires testing by trial and error in the hands of anyone. It is highly advised that a course of instruction under one or more qualified operators be taken in order that as many pitfalls as possible be avoided. Learn the nature and make-up of the material, time required in each bath for its preparation for use, temperatures under which to work, methods for proper tissue retraction, how to handle the syringes and trays and finally, when and how to obtain accurate casts from which to work. In short, no miracle has come to dentistry. We still must apply all our skills. But of this I feel sure—in a relatively very short time one may learn whether one wishes to apply its use in one's office.

FACTORS IN USE OF A REVERSIBLE HYDROCOLLOID METHOD

Briefly, let us consider the factors which deserve consideration in a discussion of the use of a reversible hydrocolloid method for obtaining models for indirect inlays and fixed bridges.

The first use of hydrocolloid was probably for the purpose of reproducing altars, statues and the like, but not for several centuries was a degree of perfection attained which caused the dental profession to consider its use. The material is composed principally of agar and water, various forms of rubber and fibres being added to give adhesion and firmness to the material. In this form it is practical for our use, as it may be brought to a liquid state by immersion in boiling water, and may be jelled in room temperature water, although the cooler the water used for this purpose the more rapidly the gelation occurs. Probably 211 degrees F. is most advised for liquifaction in this geogra-

phical locality and about 5 minutes is adequate gelation in the water-cooled tray held in position in the mouth where tap water is used. However, between these extremes hydrocolloid after boiling may be held in liquid suspension at a temperature of about 140-145 degrees F., the latter being the advised temperature of the bath for the purpose of tempering of the material to be used from the small syringe—that is, the material used for initial injection into the prepared cavity. Thus, after boiling of the material for at least a 10-minute period the smaller syringe is moved to the 145-degree storage bath for at least a 5-minute period. Upon removal it is found that it can be handled without discomfort and the contents promptly injected into the preparation. This should be done methodically, the nozzle held close to the area, releasing material first as far gingivally as the retraction of tissue permits on the distal of the cavity, working well into crevices and angles as the nozzle is moved occlusally, following the occlusal area and, in an MOD preparation, continuing down the mesial wall until the material is well into the crevice. Now the large syringe, its material having been liquified in the 211 degree bath for at least 10 minutes and moved to the 145-degree storage bath for 5 to 10 minutes is used to fill the tray adapted to the area of the arch under consideration, being sure that the tray is of adequate size to extend beyond the prepared inlay or bridge area and is supplied with soft wax stops to assure its not being overseated and to better retain the material. Now the loaded tray is moved to the 114-degree bath for 10 to 20 minutes, after which it may be attached to the water-cooling hoses by the assistant and at the moment that the material in the smaller syringe is expelled, is ready for placement over the area. It is well to scrape the surface of the tray material prior to seating, as contact with air has caused a gelation of the surface which

renders it less conducive to bonding with the warmer material from the small syringe. The tray material, being cooler and thus more resistant, when forced to place, again acts to drive the more fluid material into the less accessible areas of the cavity. The operator must at this stage maintain the position of the tray firmly for 5 minutes if tap water is used or 3 minutes if ice water is used. Cutting this time short is a sure means of tempting failure. Release of the hydrocolloid from the mouth should be accomplished with equal finger pressure applied on buccal and lingual sides of the material simultaneously and with a quick pull. This is not a difficult manoeuvre due to the elastic properties of the hydrocolloid. The model should be poured soon, but according to Van Rossem not before immersion in a 2% solution of potassium sulphate made with 2 ozs. of K_2SO_4 to 1 gallon of water for at least 20 minutes to permit a complete set of the hydrocolloid. This acts as a hydrocal accelerator. Artificial stone used varies with the operator, but do not feel that they are interchangeable. It has been found wise to learn something of those differences, arrive at the one which seems to produce most favourable results in one's hands and master its use. Generally speaking, the expansion ratio of stones varies up to $2\frac{1}{2}$ times by test when comparing non-hygroscopic with hygroscopic sets, hand spatulation and vacuum mixing and five or six varying types of stone, so it can be seen that one should not indiscriminately change from time to time and expect consistent results. Dr. Morris Thompson states that the hydrocolloid shrinkage index is approximately .0028 inches to the inch. On this basis he has learned after innumerable tests that a hygroscopic set with vacuum mixing of the stone most nearly gives the expansion desired to offset the hydrocolloid shrinkage. Of course increased hardness of the model may be obtained by an

elimination of moisture preferably by pressing in a towel to a putty consistency which still permits the stone to be vibrated into the most minute areas of the impression. Stone should be introduced very slowly, permitting it to find its level in the impression before more is added. After the pour into the hydrocolloid impression and inverting it into a cookie poured on the Typodon griddle, it should be re-immersed into the K_2SO_4 for about one-half hour and upon removal set aside for work the following day, the micro-film separator not applied until just prior to the wax-up.

As we all know so well, in the use of waxes adapted directly to the prepared tooth to obtain an impression, there are many variances, and probably no one of us is so adept in its handling that we can on any two successive occasions heat wax to exactly the same consistency, adapt bands to teeth of varying size and contour exactly the same or apply pressures exactly the same. It must be admitted that such variances are reflected in the pattern and through it, in the die, minute though the variances may be. It is wholly possible that the controls provided on a hydrocolloid bath will result in greater consistency, and, a fact not to be overlooked, can be done by our assistant using a timer while we are finishing the preparations and retracting tissue. The equipment so far as the tempering baths are concerned being in a compact unit, may be turned on by a single switch in the morning and in a period of twenty minutes loaded syringes can be ready for use. There is no need for loss of time, as a constant temperature is maintained in all baths so long as the switch is on, required variances in the respective baths being attained by setting the timer. In other words preparation of the hydrocolloid in a condition for use is purely a mechanical matter, the element of human error being largely eliminated. The impression material

is provided in a form which is easy to store, does not degenerate if directions are adhered to, and is factory prepared in such a shape as to be readily inserted into the large and the small syringe. The tempering-bath unit itself is not so large but that it can be located in one's office, preferably not too far from the chair and readily accessible to one's assistant.

TISSUE RETRACTION

To look a bit further into the problems involved in consideration of our subject we must take a few minutes to discuss what is to me and I am sure to all of us who are using hydrocolloid, the greatest obstacle—tissue retraction. It must never be forgotten that the hydrocolloids do not, to any effective degree, displace tissue and yet we are in common agreement that a properly prepared cavity extends 1 to $1\frac{1}{2}$ mm., beneath the crest of the gingiva. The well-adapted and contoured copper band does this job, but for an accurate impression using hydrocolloid in a syringe we must use mechanical, medicinal, or surgical means. One must be willing to master these methods, as no one of them is best for every circumstance. Remember, it is not the aim to depress tissue which would stifle the blood supply and possibly result in permanent injury but to push it away from the cavity margin and approximately $\frac{1}{2}$ mm. in addition. Here it is well to state that a tooth or teeth to be prepared should first be well pumiced and scaled.

Mechanically retraction can be attained in several ways:

1. The rubber dam may prove adequate.
2. Simple tying of a ligature or a strand of ordinary wrapping cord firmly around the tooth and below the gingival margin, if necessary securing the single knot with a drop of sticky-wax.
3. Stopping material placed to the depth of the crevice between appointments may do the trick.

4. Orthodontic rubber bands suitable in size and dipped in chloroform to retain elasticity may be placed, being very careful that they are not permitted to remain for a long period of time.

Medicinally the common means include:

1. Adrenalin chloride 1 to 100 or 1 to 200 into which has been dipped single strands of wrapping cord which are then tucked into the crevice and left for approximately 3 minutes. Dr. Thompson prefers No. 8 to No. 22 mercerized thread.
2. Strands dipped in saturated alum solution and similarly placed provide an excellent styptic.
3. Zinc chloride 10 to 40%, similarly used but with care, as it is a caustic.
4. Monsel Solution or Mann's Solution are used by some.
5. Sensitex and similar preparations.

Use in a dry field is of course essential.

Where a mild haemorrhage is encountered, a few drops of ferric chloride or adrenalin may aid in control, as it must be remembered that a film of blood or saliva is detectable in the resulting die, so accurate is the material.

Surgically, a method believed seldom required, Barde-Parker removal of tissue or removal by cautery may be employed, but avoid removal of connective tissue as removal of epithelium tissue is all that is required. Where radical tissue removal is necessary it is best to take impressions at a later appointment.

Only diagnosis of the immediate problem can determine the most advisable method in each case.

Possibly the day may come when the alginates will replace the hydrocolloids and waxes but until that time I believe the greatest hurdle to be overcome in use of hydrocolloids lies

in accessibility of the entire cavity to the tempered material.

PROCEDURE FOLLOWING FIRST APPOINTMENT

Now, assuming that impressions and a bite pattern have been obtained and placed in a potassium sulphate bath and a temporary material aimed toward gentle tissue retraction placed, the patient may be dismissed with the reasonable assurance that his finished inlays or bridge will be waiting at his next visit. Now the dentist or assistant should pour the casts in a stone that will give hardness and of course accuracy. At this point I wish to say that my experience to date with the use of the Typodon has proven its value, as it makes it possible to avoid duplicating the impression, taking more than one impression, or mastery of a dowel technique such as used by Sears, Garvey and others. This is done by the simple but accurate expedient of pouring the cast in the griddle, releasing it therefrom after the set, and separating the teeth to be waxed by sawing with a jeweller's saw and fine blade interproximally. Thus individual teeth can be removed, waxed as one would a die poured from a copper band impression and replaced in position on the griddle. As the impression of the opposing arch was obtained from the patient and these opposing arch impressions mounted on an articulator, replacement of the waxed die in position on the Typodon griddle enables the operator to obtain an accuracy of articulation in centric, balancing, or protrusive bites not believed possible to such a degree of accuracy by other procedures. In addition, of course, contact areas may be properly formed and located in relation to adjacent teeth. It is recommended that, for the sake of snug contacts, very fine discing of adjacent contacts or a film of soft wax when flowed in that area of the waxed pattern may make that occasional drop of gold solder unneces-

sary when the inlay is taken to the mouth. The waxed pattern having been withdrawn from the stone die, cleaned, washed, dried, vacuum-invested and cast, the inlay is examined carefully under magnification, imperfections removed with a bur, and tried back on the die. Herein one benefits from the customary advantages of an indirect technique—namely, that occasional granular, porous, or otherwise faulty castings may readily be rewaxed without the necessity for another appointment for new impression or bite, especially on crowns or overlays.

It is doubted that any of us has done many full crowns without coming to that one which required an almost oval preparation, and despite the scratch on the buccal and the scratches to indicate mesial and distal locations of self-cleansing areas of the natural tooth on the copper band, have learned on seating of the crown in the mouth that we have a rotated casting in relation to the occlusal surfaces of adjacent teeth. Occlusion is lost, contacts are misplaced, and there remains no alternative but to begin again with a new impression in the hopes that we shall not repeat the error. Impressions of bell-crowned teeth are at their best in hydrocolloid, as is general tooth contour. Full arch impressions, or half-arch at least, mounted as outlined, makes such loss of our time and necessity for explanation to the patient most unlikely.

Castings may be finished in the rough and articulated in the laboratory. If a bridge is the project, pontics may be waxed, cast, soldered, and the one-piece restoration adjusted for occlusion and a snug contact. Now the inlays or bridge are ready and waiting for try-in, finishing of margins and finally, rubber dam having been applied, cemented margins disced and polished. As the articulated casts have been our index to accuracy, adjustments should be kept to a minimum.

It is my experience that appointment time required for seating of inlays when done by the customary wax pattern indirect technique, has been very difficult to estimate. Yes, inlays have been left cemented temporarily after perhaps a full hour of seating and adjustment, whereas much or all adjustment could well have been accomplished on articulated casts mounted on the Typodon.

OTHER CONSIDERATIONS

But I feel that there is a broader picture to be considered if we are to truly evaluate a change of technique. Generally speaking, I have outlined the mechanical procedure involved in the use of hydrocolloid. Even in such a brief résumé most of us have seen loopholes, omissions, and simple-sounding statements, knowing that in our experience there has been difficulty encountered. Surely one must not feel alone in this reaction as we have all remade inlays many times. May the day never come when all inlays produced by all operators attain perfection in the opinion of those respective operators, as that day will mark the end of initiative and progress. We each of us have and must recognize our limitations, and, most important, must follow up that recognition with an honest untiring effort to overcome them.

The crux of our consideration lies in *our* evaluation of *our* ability in view of a number of factors some of which may be listed as follows:

1. Is the change of technique one which gives reasonable promise of good results?
2. Is a change economically sound in view of
 - (a) investment in materials and equipment?
 - (b) time required to produce the product?
3. Will it give me a sales-aid for use to my patients?
4. Can I give as much or more in view of the cost to the patient?
5. Can I find more enjoyment and

satisfaction through altering my procedure?

There is no "yes" or "no" answer which is applicable to all, or there would be but one method for production of prosthetic appliances or in operative procedures, and dentistry would have lost its rightful place in society.

Now it is my wish to drive home again the fact that wax, alginates or hydrocolloids for obtaining an impression are only a means to an end. The vital step toward long-enduring results still lies in elimination of the carious area of the tooth, sterilization, sedation and protection of that area if necessary, and, above all, attention to extension into the self-cleansing areas for prevention so as to minimize the possibility of further decay. Attention to proper outline, boxing and other retentive requirements such as paralleling of buccal and lingual walls interproximally, are still the foundation, and although more or less assumed in a discussion of hydrocolloid must not for one moment be minimized. It is barely possible that enthusiasm, so often the consequence of its use, may in the minds of a very few tend to overshadow one's realization of the true requirements.

SUPPLY AND DEMAND

We are all familiar with the present-day circumstances as regards the basic law of supply and demand in dentistry. We are faced with a problem so tremendous in proportion that the present political administration has in effect said to us: "Men of the health professions, you are not keeping faith with the people. In spite of the fact that there are far too few of you in relation to the increase of population, that war-time has done much toward making the American people dental conscious, that the tension and frailties that accompany our mode of living do much toward increasing dental needs, and in spite of the fact that our well-mutilated foods are depriv-

ing teeth and oral tissues of their resistance to oral disease, and despite your working longer hours than is asked of most means of livelihood—yes, though all these facts are provable, you are not keeping faith with the public. No, your returns have not increased in proportion to the cost of living index, but why cannot anyone with a dental ailment come into your office and receive immediate attention? People cannot by a turn of a switch, shut off the human motor until the mechanic can find time for repairs—they must have your prompt response to their cry for help. Now if you cannot through organized measures of your own remedy this situation, we may see fit to bring about a government administration of the health sciences which we feel will do two things: first, cause you to find shortcuts which will enable you to see more people and secondly, standardize your fees to a level which we shall determine."

The foregoing statement, while fictional, of course, does in truth indicate the problem with which we are confronted. It may well be said that the task of solution is placed squarely up to us—as dentists we must meet the growing demand and maintain a high standard of quality. With this threat before us, it is our duty to give consideration to any development which may aid us to offer better public service. Inlay technique has developed to the point that waxes, investment materials, vacuum investing, controlled temperature and casting methods have been perfected and simplified to an extent that permits the dentist to delegate many of the tasks involved in producing fine inlays and bridgework. Thus without added effort he is able to serve more patients. But the progress made thus far is not adequate and leaves us no alternative but to search out, try, and improve upon procedures once thought to be the ultimate. Admittedly, hydrocolloid as we are now concerned with it in this discussion, is in

its infancy, but as servants of the public desirous of maintaining our place in society we owe it to ourselves and our patients not to shut our eyes to its possibilities. Let us learn the trade before venturing into the tricks of the trade.

I must confess to a limited experience in the study and use of hydrocolloid and at this time do still revert to an indirect method for single restorations and for impressions in areas presenting the necessity for radical tissue retraction or removal, but the following quotation from a writing of Dr. Morris Thompson is indicative of the success that may be attained with a diligent application of the

known aids: "The interest in gels for making impressions is ever growing, partially due to the many practical and applicable means of exposing the cavity margins. These means, whether conservative or radical, judiciously used in conjunction with the present-day hydrocolloids have made it possible to obtain accurate reproductions of all preparations, including the very critical subgingival area."

Our work, to be at its best, must be so interesting and progressive that we would rather be dentists than anything else. I believe that use of hydrocolloid can do something for many of us to achieve that end.

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Assisting Patients With Dental Prosthesis

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MANY volumes have been written on prosthetic dentistry. The anatomical, the physiological, and the physical approach have been well covered. There has, however, been an almost complete lack of appreciation for the necessity of including a psychological approach, and so a chief factor in the success of the prosthetic appliances has been ignored.

The minds of the patients as well as their mouths should be prepared for the replacements necessary. To this end we believe pre-extraction records are very essential. We also believe a frank discussion of the whys and the wherefores of dental prosthesis is a very important aid in its success. For some years we have presented each denture patient with two multigraphed instruction sheets. One is given to the patient at the first consultation appointment before any extractions are made. The second is given to the patient when the dentures are inserted. They are here presented due to the great interest aroused where we have discussed their importance. They may be useful in their present form or they

can be altered to suit personal requirements. These instruction sheets are educative, and they also help solve the rebase and relin fee problem.

INSTRUCTION SHEET No. 1

Some Facts of Interest to Prospective Wearers of Artificial Dentures

In view of the fact that you are considering the substitution of artificial for your natural teeth, it would be advisable to consider what this transition may mean to you, and how best you can approach the situation to get the best satisfaction from artificial substitutes.

Mouths vary with each patient and the patient's attitude towards the filling up of the mouth by dentures (plates) also varies greatly. It has been said that denture work for its success depends fifty per cent on the dentist and fifty per cent on the patient, but in some cases where special difficulties in the shape of the mouth and tissue abnormalities are present, we frequently find that seventy-five per cent of the success depends on the patient's proper under-

standing and cooperation. The dentist must accept for the most part, abnormal conditions as they are, and make the best of them.

You should also realize that dentures are simply a mechanical apparatus, that, thanks to science, has been carried far towards the ideal in many ways and yet like all mechanisms their operation and habit of usage must be mastered if success is expected.

There are many faults still to be overcome in the present manner of restoring these lost organs. When they are first worn they will seat themselves slowly into place. This usually will mean certain spots will chafe, especially on the borders, so that for the first week or ten days frequent adjustments may be necessary. Speech and taste are also affected temporarily to varying degrees.

When natural teeth are not replaced soon after extraction, the tongue having more space seems to enlarge, so that the dentures inserted in these mouths will, at first, feel too bulky. However, a month or two will correct this, unless the teeth, especially the lowers, have been out for a long time; in which case more patience is necessary on the part of the wearer of the dentures. Then too, there is the constant change in the bony tissue in the base on which the denture rests. This, of course, varies with the individual, usually it is slowly continuous for life, so that for proper denture service the dentures should be checked at least yearly and tissue changes taken care of by relining the dentures, or, by other appropriate means. The expense of this service is nominal, but it means a properly fitting, more comfortable, and more satisfactory denture.

When no teeth have been worn for a time, the sudden distention of the lips and cheeks by the insertion of new dentures, even though restoring the expression as before the loss of the natural teeth, will seem to cause dis-

tortion, but frequent gentle lip massage will correct this. Also during this time the muscles and other tissues of the cheek slowly mould themselves to the dentures and markedly increase the stability, especially in the lower.

When teeth are extracted, nature absorbs the bony walls of the sockets to varying degree and with varying rapidity. Most of this absorption takes place during the first three months if no artificial substitutes are provided, but where they are provided earlier, they act as a splint and lessen the rate, extending it often to a year. Frequently a request is made for the immediate replacement of lost teeth. In this case the dentist may try to anticipate the natural bone absorption by trimming back the bony socket wall where he extracts the teeth. This must, of course, be only guess work. Further absorption is almost certain to ensue. The denture will then be loose and need to be remade to some degree in a few months, while in a year, a whole new denture is usually required.

INSTRUCTION SHEET No. 2

Instructions in Wearing Artificial Dentures

You are now to use an artificial substitute for natural organs, and however perfect that may be, they are not equal to the natural teeth, nor are they used in quite the same way.

These instructions will assist you in a great measure; but do not expect to acquire facility in the use of these new things at once. That comes only by patience, practice and time. You will learn a little at a time, day by day, gradually acquiring skill and command over them. In a month or two you should acquire a considerable degree of skill. All others who wear artificial dentures have to go through this process of education. The dentist may do his part perfectly, but this is something that you have to do for yourself. No one can do it for you, unless you do it for yourself your teeth will not be a success.

Great care has been exercised to make these dentures fit accurately, but due to the mouth having hard and soft areas, more or less adjustment and attention is necessary for the first week or so while they seat themselves into place. They are stabilized, or held in place, by two things, first by the proper fit to the tissues, second by the proper meshing of the upper teeth against the lowers, so that in grinding food the two dentures mutually support each other.

The lower teeth are often quite troublesome, often much more so than the uppers, since the lower jaw very frequently presents only a flat ridge to set the teeth upon and there is thus little to hold them in place.

You should not allow yourself to get in the habit of leaving the dentures out. To do so is a distinct loss for no one ever learned to use a set of dentures by leaving them in a bureau drawer. You can learn to use them only as a child does walking, by walking though imperfectly at first.

In speaking, there are certain sounds that are apt to be more difficult than others; s, x, ch and sh are the worst. To overcome this, practise reading aloud and do it alone. When you meet with a word that bothers you, stop and say it over again until you can say it distinctly. Remember that you have to train the muscles as a child has to do in learning to talk.

Learning to eat with them will take

somewhat longer, but the principle is just the same. Don't expect to eat your first meal with your new teeth as you did with your normal teeth, or as someone who has worn artificial teeth for a number of years, for you won't do it. No one does. In fact you had better get used to the feel of them for a few days before you try to eat with them; only an exceptional patient can use these new dentures to chew any of their food for the first day or two; but after that gradually increase the time at each meal, eating slowly and in a few days more, with increased confidence and control which comes with practice, the whole meal can be essayed.

In biting on a hard substance, like an apple, an ear of corn or a crust of bread, press it upwards against the upper teeth, this is good advice on taking anything into the mouth.

If a sore spot arises come into the office at once while the sore spot is showing, not after it gets well.

Will you keep your teeth in at night? Yes, at least until you are used to them; after that suit yourself.

Your dentures are made of special material and it is advisable to keep them in water when not in the mouth.

For cleaning, use a stiff hand brush with soap and water, brushing all surfaces. It is wise to brush over a basin of water to avoid damage in case the dentures slip from the hand.

The professional man has a very definite, working responsibility as a citizen. After all, he is in a sense a person set aside, a person screened, selected, and certified for an important special area of service. Beyond that, by the nature of his calling the professional man has extended and close contact with many of his fellow citizens in circumstances which permit him to discuss and to stimulate general interest in public affairs. The professional man has, then, a specific added opportunity, and responsibility, for raising the standards and for increasing the achievement of society as a whole. He has a responsibility not only for setting and for maintaining high standards for himself, but for working toward such high achievements in the remainder of society as well.—Leslie G. Moeller, Iowa City, in Jour. Am. College of Dentists.

Everybody owes something of his time to the upbuilding of his profession to which he belongs.—Theodore Roosevelt.

A Dentigerous Cyst of Unusual Interest

by GEORGE A. MORGAN, D.D.S., DOUGLAS P. BRYCE, M.D., and H. RIVKIN, D.D.S.,
Toronto, Ontario

PROBABLY the most frequently seen pathologic area of radiolucency is the cyst.

One of the most frequent complications attending the improper eruption of the teeth, is the formation of dentigerous cysts. Dentigerous cysts are familiar roentgenographic variations and present little difficulty in interpretation except when they involve unerupted bicuspid or molars in the maxilla, where they may be confused with the maxillary sinus.

Such a case is presented:—

The patient, a young lad of 14 years, was referred for the removal of a maxillary, left second molar.

The maxillary, left second molar was sore to pressure, elongated and distally inclined with some slight discharge from the distal.

At operation, under local anaesthesia, the second molar was removed and following its removal, considerable cystic fluid was evacuated from a large cavity in the heel of the maxilla.

Dental x-rays, (figure 1), fail to outline extent of cyst or disclose unerupted third molar.

Further x-rays, (figures 2 & 3), disclosed a large dentigerous cyst completely filling the space normally occupied by the maxillary, left antrum and pushing the crown of the unerupted third molar up beyond the floor of the nose and under the eye.

Cysts enveloping unerupted teeth, are probably caused by activity of the remains of the enamel organ. The dentigerous cyst, so formed, is really an enlargement of the dental sac and from previous experience it has been observed, that the sac is most firmly attached to the crown of the unerupted tooth.

After E.N.T. consultation, it was decided to completely remove this cyst

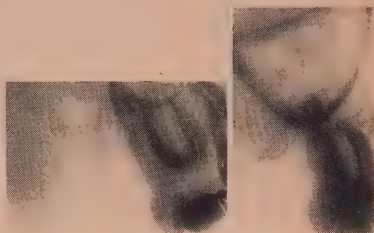


FIGURE 1.

Dental x-rays of the maxillary, left bicuspid and molar region which fail to illustrate the extent of the cyst or disclose the unerupted third molar.

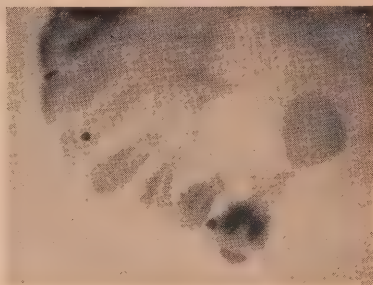


FIGURE 2.

Occlusal x-ray illustrating size and extent of dentigerous cyst and lateral position of unerupted third molar.

with the thought in mind that if the cystic walls were freed up from the boney cavity, that the unerupted third could be removed with the cystic lining.

At operation, under local anaesthesia, a further window was made on the buccal, the cystic lining freed up from the boney cavity and the cyst removed, bringing with it the unerupted third molar, (figure 4).

This case is unusual in that it illustrates the size to which these dentigerous cysts may grow and the extent to which they may fill in the normally occupied maxillary, antral space.

This case also illustrates where a third molar is missing with no history of previous extraction, we should not assume that it is congenitally absent.



FIGURE 3

Photograph of x-ray illustrating anterior, posterior position of unerupted third molar.

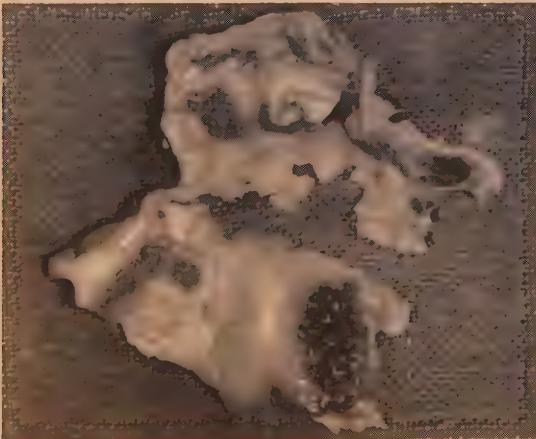


FIGURE 4.

Photograph of dentigerous cyst, illustrating thickness of the sac and its firm attachment to the crown of the unerupted third molar.

Case Report of a Large Paradental Epithelial Cyst

by LOUIS KOBRINSKY, M.D., F.R.C.S. (Edin.) and SAMUEL M. BORDEN, D.D.S., M.S.D.,
Winnipeg, Manitoba

A 62-year-old white male was referred to the office January 18, 1952. His chief complaint was that of pain in the mucobuccal fold upon wearing his upper denture. He had returned to his dentist several times during the past few months complaining of further denture irritation.

Past History

All the patient's upper teeth had been extracted six years previously and this was the first time the patient had had occasion to complain about his denture. The patient could remember nothing unusual about his teeth prior to extraction, nor could he remember whether any teeth were congenitally missing.

Physical Examination

Physical examination revealed a well-developed, middle-aged man. The patient, except for a hernia operation several years previously had been relatively free from systemic ailments. B. Press 130/80; Hb 96%; R.B.C. 4,930,000 W.B.C. 9,900 Differential count — normal; Wasserman — negative; urine—acid, sp.g. 1.022, albumin and sugar negative. Bleeding time and clotting time within normal limits.

Clinical Examination

The upper arch was completely edentulous. There was a slight swelling in the mucobuccal fold which extended from the left of the frenum to approximately the first molar area on the right side. There were 9 teeth present in the lower arch and all of these were in a healthy condition.

Roentgenographic Examination

A P.A. view of the skull revealed a large radiolucent area in the maxilla from the left side of the mid-line extending and pushing into the maxil-

lary sinus on the right. This can be seen more clearly in the lateral view of the maxilla, taken through the open mouth. Fig. 1. The periapical film tends to show a dense, amorphous mass in the centre of the radiolucent area. Fig. 2. There is a horizontally impacted lower molar which is not related to the case.

Operation

Due to the large size of the cyst and the invagination of the cyst into the right maxillary sinus, a Partsch operation was first considered, but it was finally decided to perform a complete enucleation. Where no teeth are present, differential diagnosis of cysts is sometimes difficult and the possibility of an ameloblastoma must always be considered.

Under sodium pentothal anaesthesia, with local infiltration for haemostasis, the enucleation was performed on January 25, 1951. A horizontal incision following the outline of the upper ridge was made from the left cuspid region to the right tuberosity. By blunt dissection the cyst membrane was gently separated from the overlying soft tissues and the entire mass lifted from its bony crypt. The cyst had encroached upon and displaced the floor of the maxillary sinus but no perforation could be found into the antrum. The cavity was packed lightly with oxycel and the soft tissues scarified on the inside so as to fill the entire concavity with blood. Intermitent sutures were placed.

PATHOLOGY REPORT

Gross:

A fragment of membranous tissue measuring 3.5 x 2 x 0.2 cm with a fragment of yellowish calcified material measuring 0.2 cm in diameter attached.



FIGURE 1



FIGURE 2

Micro:

Section of cyst wall shows a stratified squamous epithelial lining in some areas. The wall consists of collagenous fibrous tissue containing numerous large acicular cholesterol clefts surrounded by multinucleated giant cells. There is no evidence of malignant neoplasia.

Anatomic Diagnosis:

Paradental epithelial cyst.

Dr. Hoogstraten/EF/DM

COURSE

Recovery was rapid and uneventful. The sutures were removed on the fifth postoperative day and a new denture inserted three weeks after the operation.

To achieve our destiny we must grow big, and to do so we must think big. To think negatively and fearfully at a time that calls for greatness can destroy a dream which is fast approaching reality.—Canadian Chamber of Commerce.

Developing Normal Occlusion*

by W. K. SHULTIS, D.D.S., Toronto, Ontario

WHEN we consider "Normal Occlusion" we should understand its full implications. The term is all too often taken to imply only the way in which the teeth come together in occlusion. We must not forget that normal occlusion also includes the relationship of the teeth to the basal bone, one dental arch to the other, and each dental arch to the cranium. Associated with this must be a normal growth, development, location and correlation of all the environmental tissues and parts.

Each child is endowed with a certain inherited growth potential. How much of this maximum growth and development potential is realized, will depend on the many and varied experiences that may befall the child throughout life.

All developmental processes working in the individual are governed by the purposeful laws of physics and chemistry. Function is the normal purposeful motor achievement of organs or tissues designed to further growth and development in the child and the maintenance of organic health in maturity. Disuse on the other hand, leads to atrophy. Malfunction of parts leads toward further maldevelopment. Hence a malocclusion tends to become more severe and rarely if ever self-correcting without dental interference.

The basis of all growth and development is of course nutrition. Nutritional disturbances may be most difficult to ascertain and yet may have far-reaching effects in the overall picture of malocclusion.

ORDER OF SECONDARY TOOTH ERUPTION

In order to more fully understand normal occlusion it is wise for us to appreciate the order in which the secondary teeth erupt. Recently, at the University of Toronto, Dr. Robert Lo

and Dr. Robert Moyers carried out a research project to ascertain "The Sequence of Eruption of the Permanent Dentition". Eighteen different orders of sequence were noted in the maxillary eruption, and seventeen different orders in the mandibular eruption. Numerical symbols are used when referring to teeth in their eruption sequence. (eg. 1—central incisor, 2—lateral incisor, 7—second molar, etc.

The most frequently seen sequence in the maxilla was 6124537. The most frequently seen sequence in the mandible was 6123457. The combination of these eruption sequences provided the greatest incidence of normal occlusion. The most unfavourable sequence in the maxilla was that in which the second molar erupted earlier than either the bicuspid or cuspid. The most unfavourable sequences in the mandible were those in which the cuspid erupted later than the bicuspid or when the second molar erupted prior to either the cuspid or bicuspid. It was found that where the maxillary molars erupted prior to the mandibular molars a class 2 or distocclusion usually resulted. From the foregoing, it is evident that careful clinical guidance is essential during the so-called "mixed dentition" stage. The evidence in this research indicates that there is prognostic value in studying the sequence of eruption in the radiogram prior to the loss of the deciduous teeth.

Let us consider a few variations from this desired sequence of eruption and their effects on the future occlusions:

At about 3-4 years of age after the deciduous teeth have completely erupted, we expect to find the maxillary deciduous cuspid in occlusion, half a tooth distal to the mandibular cuspid.

*Presented before the Canadian Society for Children in Toronto, May, 1952.

The distal surfaces of the deciduous second molars end on an even plane, due to the maxillary molar being smaller than the mandibular molar. About 5-5½ years of age the same condition should exist, or better still, the mandibular second deciduous molars be slightly mesial to the upper second deciduous molars. If, however, the maxillary second deciduous molars appear slightly mesial to the mandibular deciduous molars, and the maxillary cuspid is no longer half a tooth distal to the mandibular cuspid, we must realize that the maxilla is growing anteriorly faster than the mandible. Since anterior growth of either jaw precedes the eruption of each posterior tooth the maxillary first molar will in this case assuredly erupt before the mandibular first molar and a Class 2 or distoclusion result. In such cases the mandibular deciduous cuspids often become locked distal to the maxillary deciduous cuspids. This occlusal interference prevents the mandible taking up its correct relationship to the maxilla. Where this condition is recognized in its incipency, the distoclusion may often be prevented or corrected by removing any cuspal interference in the deciduous cuspid and deciduous molar regions. In these cases it is wise to have the patients do myofunctional exercises as outlined by Dr. A. P. Rogers in the *Journal of the American Dental Association* January 1936.

Where the mandibular incisors erupt some time before the first molars we often find a Class 2 or distoclusion developing. In these cases the maxillary first molars usually erupt before the mandibular molars. Hence the apparent lack of chin due to retarded anterior growth of the mandible.

When the mandibular first molars erupt a long time before the maxillary first molars a Class 3 or mesiocclusion tendency will usually be found to exist. Any condition, such as habits or occlusal interferences etc. which tend

to encourage forward growth in one dental arch and/or discourage growth in the opposite dental arch, may be sufficient to produce the variance in arch length which will result in an undesired sequence of molar eruption with its attending malocclusion.

The failure of the deciduous anteriors to space may forecast:

(1) A lack of lateral jaw development.

(2) The possibility of missing teeth.

(3) The possible future ectopic eruption, unless the secondary anteriors erupt lingually or labially.

The failure of a deciduous tooth to loosen and be shed at the expected age, or soon after the corresponding tooth in the same arch, may indicate:

(1) The presence of an impacted secondary tooth.

(2) The presence of a supernumerary tooth acting as an obstruction.

(3) A missing secondary tooth.

(4) The ankylosis of the deciduous tooth.

(5) The secondary tooth about to erupt into a malposition such as a cross bite. In such cases an x-ray will answer the question.

The timing of tooth eruption is also important. The sequence of eruption may be as desired and yet if the timing of eruption is wrong a malocclusion may still result. One of the most common areas for this to occur is in the mandibular cuspid areas. The mandibular deciduous cuspid is smaller mesiodistally than the secondary cuspid. To compensate for this we find that the first deciduous molar is usually shed just as the secondary cuspid is erupting. This allows the erupting cuspid more arch length in which to erupt. The same process occurs where the second deciduous molar is shed just when the first bicuspid is partially erupted. Since the second deciduous molar is larger mesiodistally than the second bicuspid, sufficient arch length is left for the second bicuspid eruption. However, where the timing of eruption is

wrong, we may find the secondary cuspid completely erupted before the first deciduous molar is shed. In this case either the cuspid erupts anteriorly, overlapping the lateral incisor, or the cuspid erupts into the arch causing a crowding and overlapping of the central and lateral incisors. By testing the deciduous teeth for mobility it is a simple matter to ascertain where the timing of eruption is wrong. In such cases, the erupting cuspid can be given more arch length by discing or slicing the mesial of the first deciduous molar. This same process can be used in guiding the eruption of the first bicuspid at the expense of the second deciduous molar. In this way the discing or reduction of mesiodistal width of deciduous teeth can be very useful when either the sequence of eruption, or the timing of eruption, is other than desired. The only limitations for such malocclusion preventive measures is where the arch length is less than the sum of the mesiodistal widths, of the secondary teeth.

We can measure the arch length molar to molar but how can we estimate the size of the unerupted tooth? Measuring unerupted teeth in x-rays is accurate only to within a 10% error. In 1947 Dr. Murray L. Ballard and Dr. Wendall L. Wylie published an article based on research at the University of Southern California in which they established a relationship between the sum of the widths of the four mandibular incisors and the sum of the widths of the cuspid and two bicuspid. In 1949 Dr. Paul W. Greiwe in a similar study at the University of Iowa established that it was possible to take the sum of the widths of the four mandibular incisors and from this measurement determine what amount of space should be maintained for the secondary cuspid, first and second bicuspid in each of the four lateral segments. No relation was found between the size of the four maxillary anteriors and any other

group of teeth. It is interesting to note that the correlation coefficients obtained in Dr. Greiwe's research were all significant at the 99.9% level or better.

Needless to say this information has proved very valuable in mixed dentition analysis. We are now able to determine without guessing what space is required for the eruption of both the maxillary and the mandibular cuspid and bicuspid. The one exception where this may prove inaccurate is where the mandibular second bicuspid have an extra cusp. This can be discovered in an x-ray; in such cases a little extra space must be allowed. It must be kept in mind, however, that when the second deciduous molars are shed the six-year molars may move, drift or be shoved forward, thereby shortening the molar to molar arch length. To allow for this a leeway of about 1.5 m.m. is required in each lateral mandibular segment and about 1.25 m.m. in each maxillary lateral segment. If this leeway or extra space, over and above that necessary for cuspid and bicuspid eruption, is not present then an appliance may be necessary to hold the molars steady while the deciduous molars are shed and the bicuspid erupt. The results of Dr. Greiwe's research have given us a much more sound basis for deciding in which cases of malocclusion extractions will be necessary. It also helps us make a diagnosis long before all the second teeth have erupted.

In this subject of occlusion, the problem would appear to be between the size of the teeth on one hand and the available arch length to accommodate the teeth on the other. The size of the teeth is predetermined and dictated by genetic linkage. This at present we cannot influence. The maximum limit to which the dental arches grow and develop may be determined by heredity. However conditions such as diet, function, health, and environment help decide how much of the maximum normal

growth and development will be attained. By environment we refer to the forces that at one time or another come to bear upon the teeth and dental arches during the lifetime of the individual. These forces include tongue pressures from within the dental arches and pressures of the muscles of the lips and cheeks from without. The balance of force between these two groups, the inner and outer pressures, helps to decide the form of the alveolar bone of the dental arches and the alignment of the teeth within the arches. Habits such as thumb sucking, lip biting, open lips, etc. may upset this normal lips-tongue muscle balance, and thereby influence the ultimate occlusion. In most cases of abnormal muscle balance we find not one but a series of contributing factors. The effects resulting from such abnormal conditions as open lips and sucking habits are easily recognized and understood. For the sake of brevity we will confine our observations to the actions of the tongue.

ACTION OF THE TONGUE

The tongue consists of groups of muscles which can lengthen and narrow the tongue, shorten and broaden the tongue, protrude, retract, elevate, lower, and even curl or funnel the tongue. The muscles of the tongue are under the control of the central nervous system and yet are able to act almost involuntarily as in speaking and swallowing. Before the maturation of tongue control the almost involuntary tongue movements may form a habit pattern which continues to bring intermittent and undesirable pressures to bear upon the teeth and their enveloping structures.

At rest the tongue normally fills the vault of the mouth. The tip of the tongue either rests on the roof of the mouth about $\frac{1}{8}$ to $\frac{1}{4}$ of an inch posterior to the anterior teeth, or curls slightly down to touch the lingual of the mandibular anteriors. In this position the tongue by its very size alone stimulates normal lateral develop-

ment of the dental arches. However, in children where nasal congestion or allergies have interfered with nasal breathing, we frequently find a centre crease along the posterior two-thirds of the tongue. This facilitates the passage of air over the tongue during periods of nasal distress. During and following sucking habits the tongue may also curve down in the centre. Accompanying this there is usually a narrowing and elongation of the tongue while at rest. The result is a tongue which presses against the lingual of the maxillary anterior teeth and at the same time fails to fill the vault of the mouth. This creates a positive pressure anteriorly and a negative force laterally. Under such circumstances, the cheek muscles are sufficiently strong to discourage lateral arch development and the lips are usually too weak to balance the anterior pressure of the tongue against the teeth. The result is a narrow arch with high vault and protruding anterior teeth.

SWALLOWING

Let us consider the function of normal swallowing. The lips are brought together. The soft palate and naso-pharyngeal sphincters combine to close off the naso-pharynx from the oral pharynx. The teeth are brought into occlusal contact. The tongue spreads and the front and sides of the tongue sweep up the lingual surfaces of the occluded teeth and their supporting tissues until the whole dorsum of the tongue comes to lie in contact with the palate. Then, while breathing stops, a powerful contraction of the mylohyoid muscles thrusts the tongue hard against the teeth and palate, thrusting the bolus of food posteriorly into the throat. The cheek muscles are inactive in this period. When juicy or soft food (fruit) has been partly divided by the teeth, the juice is sucked from it and swallowed with the teeth separated, and the cheek muscles contracted, to recreate a rigid though somewhat

larger cavity. This also occurs with soft foods.

In abnormal swallows we find the teeth apart and the cheek muscles contracted. The lips are frequently open, and the tongue is thrust between the anterior teeth or against the lingual surfaces of the maxillary anteriors. The tongue by so thrusting seals the anterior of the mouth and permits the act of swallowing to occur with the lips apart.

Wrong swallows usually exhibit a narrow maxillary arch with high vault and protruding maxillary teeth. Both arches may be narrow. They have a tendency to bolt their food. They have less clean mouths and teeth, and are subject to more colds, catarrh, sniffles, sore throats, snoring and earaches. It is of interest to note that a child who lisps is a wrong swallower. A child, who has had a sucking habit for any period of time, will invariably exhibit abnormal swallowing. In this case however, if the lips are strong and normally closed, the maxillary arch may not be characteristically narrow with protruding anteriors. This is because the lip pressure is sufficiently strong to nullify the tongue and sucking pressures. This explains why some thumb suckers never exhibit protruding maxillary anterior teeth. It also explains why we find protruding teeth where there is no particular history of thumb sucking, the tongue thrusting being stronger than the lips.

We should keep in mind that there is no habit or undeveloped muscle that cannot be improved. The degree of success in correcting a habit or strengthening a weak muscle will depend on our ability to instruct and the patient's willingness to co-operate.

ABNORMAL DEVELOPMENT

The underlying reasons for the abnormal growth and development of the dental mechanism are:

- (1) Hereditary influences.
- (2) Feeble function of the teeth and environmental muscles.

(3) Malfunction of the teeth and environmental muscles.

(4) Nutritional disturbances.

(5) Localized conditions. These include size and eruption anomalies as well as the host of causes we might list as careless or neglected in origin.

(6) Illnesses or health disturbances.

There are some general suggestions for the prevention and correction of these environmental conditions which so often influence the occlusion for the worse.

(1) Prevent or clear up any conditions which interfere with nasal breathing.

(2) Eliminate abnormal tonsils and adenoids which may cause improper swallowing.

(3) Keep the lips closed—exercises should be prescribed if necessary to strengthen the lips.

(4) Where tongue habits exist, recommend exercises, to control the tongue and correct the swallowing.

(5) Recommend nutritious, dry, coarse foods to encourage good health and the proper functions of mastication and swallowing.

(6) Institute malocclusion preventive measures wherever possible.

SUMMARY

We as dentists are privileged to observe and guide the wonderful drama of growth and development unfolding every day before our eyes. No part of the human body shows so many interesting and important changes, occurring in endless succession, as does our own particular field of endeavour. Even as a traffic officer is responsible for guiding traffic into the proper channels, so are we responsible for recognizing conditions within the mouth and by means of our knowledge to guide the teeth into those channels which will achieve a well-balanced, functional occlusion. Developing normal occlusion is a challenge which keeps dentistry, above the monotony of hole filling, in its rightful place among the healing arts.

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The Dentist Gives — This Is Your Opportunity

by FRANK L. COLE, D.D.S., Toronto, Ontario

Prepared for the Endowments Procurement Committee of the Faculty of Dentistry,
University of Toronto—Applicable to all dental colleges.

THE graduates of Canadian universities have trained within the walls of many buildings and have benefited by the experiments and research carried on by the faculties and research workers of their respective departments.

The faculties of dentistry are doing their part in this work with the facilities at their disposal for the education of both the undergraduate and graduate.

Federal and provincial grants as well as private endowments have built the different colleges, but today the increased population has created a demand for more dentists and has made it imperative that increased accommodation and more modern buildings for the teaching of dentistry be considered at once.

Buildings are essential, but without the equipment and maintenance they are "hollow walls". Each faculty dean strives to obtain the best teaching

staff possible and the best of physical facilities in order to give the students in his care an education which will enable them to play an indispensable role in the life of the country.

Do we as dentists believe in this requirement? How can we help? We may not be able to finance a new dental building but there are many other possibilities for that donation—establishment of a chair for research; the equipment for an operating room; the purchase of special equipment required for some research problem; and also the funds to assist the bright and enthusiastic undergraduate who has the will but not the means.

We have all benefited financially and socially by our university education. We cannot take our savings with us and would it not be satisfying to know that aid, when asked, is given? In the words of the Scripture—"Before they call, I will answer".

Frank L. Cole, D.D.S.

ANNOUNCEMENT

At the Ninth Annual Seminar for the Study and Practice of Dental Medicine held in Palm Springs, California, October 26, 1952, the Board of Directors announced the founding of "THE AMERICAN INSTITUTE OF DENTAL MEDICINE". This Institute is non-profit in character and is so incorporated under the laws of the State of California. Its prime purpose is to further postgraduate education in the field of Dental Medicine. The Annual Seminar will continue as in the past 9 years as one of the essential functions of this Institute. In addition its members will be offered a case history each month from the broad field of Dental Medicine. These histories will be accompanied by original 35 mm. Kodachromes of the oral condition, pertinent laboratory findings, medical background, roentgenograms, histologic slides, photomicrographs, or whatever may be indicated in each individual case. This service will begin in January 1953. Any member of the ADA or AMA and their foreign equivalents are eligible for membership.

Further information may be obtained from the Executive Secretary of the Institute, Miss M. Lewis, 2240 Channing Way, Berkeley 4, California.

The Forum

THE DENTIST TAKES A LOOK AT HIMSELF

by H. A. ASKEY, D.D.S., Lincoln, Neb.

Condensed from *North-West Dentistry*, Oct. 1952

Success is built of many factors, some large and some small, and in order to help you in your thinking about self-improvement, I shall call your attention to ten ways in which you may attract desirable people to your practice, and help to assure your success in dentistry. These fundamentals are just like the Ten Commandments—much has been said about them, but nobody has ever been able to improve on them.

1. *Be a Good Dentist.*—Plan and execute each operation to the very best of your ability. Take postgraduate courses. Read—and then re-read your dental journals. Discuss and compare techniques and ideas with other dentists of proven ability.

2. *Cultivate an Attractive Personality.*—Remember, people are attracted to your office by your personality; the best you can hope to do is to hold them there by your good dentistry. The most pleasing personalities go hand in hand with good health, so you and I as members of one of the healing professions should do our utmost to achieve and maintain healthy bodies.

Nearly all successful people have initiative—the desire and the willingness to try for self-improvement. Keep right on trying and you'll be pleased at the degree of success that will reward your efforts.

People will like you better if you have the ability and the willingness to smile. Of all the things you wear, your expression is the most important. Take time to be friendly. Only your

friends come to your dental office—your enemies go to some other dentist.

3. *Maintain an Attractive Office.*—

How does your reception room look—and smell—when a desirable patient opens your door? Is the lighting bright and cheery? Are the chairs comfortable, and clean, and in good taste—or do they look like rejects from somebody's porch? Do your drapes look like the ones your patients are accustomed to seeing in House Beautiful? Do you always have plenty of fresh air, and do you use some good deodorant? See that your reception room pictures illustrate peace and tranquility and happiness and good taste.

The kind of reading material you provide reflects to a great extent your standards, and the type of office you operate.

As we go on in to the operating room, our first impression is that it is immaculate—just one word—immaculate.

4. *Present an Attractive Working Team.*—you and our assistants. The very first time that you are seen, you make an impression—by your appearance, your posture, your expression, your smile, and your attitude. Make it a good one! Advertise by your appearance and behaviour that you are a competent dentist.

5. *Obtain Efficient Working Conditions.*—One of the best ways to help save the old back is to operate from a stool. Check the fit of your white shoes, and stand on a rubber mat.

Don't hesitate to ask your patient to turn the head and raise or lower the chin for your convenience.

6. *Maintain the Patient's Comfort.*—When a patient walks in your door he becomes your guest—paying guest, if you please—so don't fail to do everything you can think of for his comfort. Pad the so-called headrest with a small pillow or soft rubber sponges, then cover it with a paper cover. Loosen tight collars. Use warm water on every revolving instrument. Use novocaine almost universally: It's wonderful to be known as the dentist who doesn't hurt!

7. *Keep Accurate Personal Records.*—Be sure to enter on every patient's card, a record of the things he does and says that are of interest in the future. You or your assistant can record trips, hobbies, vacations, honours received, birthdays, weddings, babies—all of the things that make life interesting. By keeping accurate personal records you can help to cement the bonds of personal friendship with your patients—and don't forget, it's just your friends who come to your dental office.

8. *Read, Study, and Utilize Psychological Aids in Practice Building.*—You can write yourself a check for an extra \$1,000 in time for next summer's vacation if you'll master the contents of just six books whose titles I'll give to you now: George Crane's "Psychology Applied"—Dale Carnegie's "How to Win Friends"—Elmer Wheeler's "Tested Sentences that Sell"—Vash Young's "Be Kind to Yourself"—Webb & Morgan's "Strategy in Handling People," and finish up with a liberal knowledge of the "World's Best Seller," whose Central Figure has had more influence on the world than any other man who has ever lived. After you study these books, you will plan your case presentations as carefully as you plan your bridge abutments. Very likely you'll check your presentations a few times with a tape recorder, just to be sure of what you said and how you said it.

And what a surprise you will get when you hear yourself in action!

You and I are wasting our time and missing the point when we talk about the cost of materials. It seems to me that you and I will do much better to talk about beauty, and pleasure, and satisfaction, and happiness than to try to sell an ounce of gold, or a piece of plastic. When you offer the ladies a method of preserving their youth and charm, the price tag loses its importance. Forget that you ever heard the word "cost." Instead of saying, "This work will cost you so much," think how much better it sounds when you say "Plan 1 comes to 356, Plan 2 comes to 187, and Plan 3 comes to 59." Not three hundred and fifty-six dollars, or one hundred and eight-seven dollars, but simply three fifty-six, one eighty-seven.

People should be reminded that they don't spend money for dentistry, they invest in happiness, and beauty, and social acceptance and youthful appearance. You don't repair a tooth—you rebuild it. You don't pull a tooth—you remove it. You don't fix up a mouth—you rebuild or recondition it.

One of the most pleasant and effective things that you and your office staff can do, is to compliment your patients for something while they are in your office. When they have had a long session, compliment them for being such fine patients. Compliment them for the progress they are making with the new dentures. Compliment them for taking such good care of themselves after that difficult extraction.

9. *Select a Good Listening Chair.*—First of all, the patient wants to tell us his story; he wants to unload his problems upon our manly shoulders, and to make us his partner in knowing about these ailments. Sooner or later, we will have to listen to his "Organ Recital," and if we are smart, we will do it sooner instead of later. That's where your "listening chair" comes in.

Your assistant has introduced you, and you smiled, repeated the name, and shook hands. Your voice was pleasant. As you sat down in your listening chair you said, "I notice that Mrs. Blank referred you to our office, and that is surely a good recommendation for Mrs. Blank is one of our finest patients!" Your new patient will fairly beam, and you may be sure that Mrs. Blank will get a phone call from the new patient the moment she gets home. Next to the atomic bomb, this sets in motion one of the world's greatest chain reactions, and it all started with a compliment!

The listening chair offers you many advantages. When you sit down, you can relax and think better. Your patient can also relax better when she sees that you are comfortably seated. When you stand, you usually lean on

something—and you just don't look very impressive with your elbow on the bracket table and your other hand in your pocket. And this above all, when you sit down and listen, you become a consultant, delivering the knowledge and judgment that is in your head; when you stand, you become an artisan, or craftsman delivering the skill that is in your hands.

10. *What Are You Going to Do About It?*—I sincerely hope that each of you will take the suggestions I have offered and not only adapt them to your own practice, but go far beyond the place you now occupy on the ladder of success. We all get so busy making a living, that we sometimes fail to make a life, and it's good for each of us to step away and take a good look at ourselves from the patient's point of view.

ETHICS FOR ASSISTANTS

by DR. J. W. YARBROUGH

Excerpt from the Dental Assistant

Being honest and faithful to your employer, by no stretch of the imagination, means only one person—it includes the dentist and every one of his patients. Yes, every one of them—not just the ones you may happen to know or like. It includes the patients who are late for appointments, as well as those who are always on time. It includes the ones who may have to cancel or break an appointment, as well as those who may encounter some difficulty but still keep their engagements. It includes the well-to-do the same as the not-so-fortunate. It includes the ungrateful as well as the grateful. And lastly, it includes the ones who are not such prompt pay as well as those who send their checks on the first of the month. Treat them all alike while they are in your office—be just as nice to one as to the other; and under no circumstances ever be rude or act indignant. Master all situations

instead of letting your feelings come to the surface. Sure, I know there are times when it is hard to do, but it can be done; and in order to be an efficient assistant you must control your impulses at all times. Your employer cannot teach you to do this, therefore it is up to you to master your own personality; but usually your employer is the first to see if you have done so. And right here, let me remind you that because of the patients who may come to your office you have a job—if you run them away, you know the result; but if you use the proper approach and technique toward patients, you aid in increasing your employer's practice; and as a result your compensation will surely be increased. All the above statements apply to telephone technique as much as to personal contacts of the office. Very often the first impression of any office is made over the phone.

"When you reach the end of your rope, tie a knot and hang on."

APPLICATION FOR INTERVIEWING ASSISTANTS

The following is the form used by ladies applying for the position of Doctors Sorrels and Sorrels of Oklahoma City when interviewing young Assistant. Their practice is limited to orthodontics.

APPLICATION BLANK

DRS. SORRELS & SORRELS

Date No. & Telephone

Name

Home Address

City Address

Whom do you live with?

Education:

High School

Commercial Education:

Bookkeeping

Shorthand

Typing Speed

English (Spelling & Punctuation)

Previous Employment

Nature of Work

Married Single Divorced Children

What are your hobbies?

Are you engaged? Prospects

Church Will you likely be permanent

Salary Minimum Future Salary

Are you willing to spend one evening per week in the furtherance of your education with respect to this position?

Age Weight Height

General Appearance Neatness Teeth

General Health

Character References:

(Do not give relatives)

Have you ever been bonded?

Desirability: Excellent . . . Fine . . . Good . . . Medium . . . Poor . . .

NOTE: All employees of a dental office should have fine, well cared for teeth, even if artificial.

To become a success, a dental office must be conditioned along the same lines as other types of businesses. We have our overhead expense and we have our productive working hours. It is up to the dentist to make the most of the working hours. When the doctor is young, strong and filled with ambition is the best time to put in long hours of work. By hard work in the beginning he may be in a position to choose easier hours after he acquires a family and, perhaps, a hobby.

If the doctor's health permits, or if he chooses, he should look forward to at least a two-chair office preferably a three-chair office with at least two dental assistants. It is this type of office that can turn out more dentistry.—L. A. Lucas in Jour. of Oklahoma Dental Assoc.

THE ETIOLOGY OF CARIES

by ROBERT G. KESEL, M.S., D.D.S., and DONALD A. WALLACE, Ph.D.
Univ. of Illinois College of Dentistry

Résumé of report given at the International Dental Congress in July

Tooth substance can be destroyed by either of two processes, demineralization or digestion. It appears that these two processes operate in conjunction to produce human dental caries. Evidence indicates that demineralization is produced by acids elaborated from the action of bacteria on a fermentable fraction of the diet. Other possibilities for demineralization must be considered such as acid foods, salivary acidity, endogenous acids formed from the tooth substance, and non-acid demineralizing processes, but the abundant evidence for the bacterial concept overshadows all the others. The methods that up to the present have been employed successfully to reduce caries activity can be rationalized on the basis of bacterial acidity. Studies on experimental animals also confirm this view. Rats reared in a germ-free state do not develop carious cavities despite their consumption of a cariogenic diet. Conversely, hamsters fed on caries-producing diet by stomach tube to avoid the influence of the food in the mouth developed no lesions.

The digestion of the organic portion of the tooth appears to be accomplished by bacterial enzymes of a proteolytic nature. There is evidence that some decalcification must precede digestion, but whether caries is primar-

ily a demineralizing or a necrotizing process is controversial.

There is a wide variation in the number, form and size of carious lesions among people. This fact suggests that other factors exist that influence the attacking forces. A number of predisposing or indirect factors may have a role in the initiation and progress of the carious lesion and they may operate in two ways. One group functions in a general way through systemic channels. This includes age, emotions, endocrine secretions, climatic and geographic location, health, heredity and nutrition. The other exerts its influence locally in the mouth at the tooth surface. Included in this group are the diet, the dental plaque, the saliva and the tooth. The significance of these predisposing factors is difficult to determine. One reason is that caries is so prevalent that it can be associated with a great many conditions, but whether the relation is casual or coincidental is not always clear. The search for associations also is made difficult because in the final analysis the comparison must be made on humans and humans are difficult subjects for controlled studies. Consequently many of the questions concerning the indirect factors that influence caries remain unanswered and provide a fertile field for more investigation.

PRACTICAL CONSIDERATIONS IN AGING

by CLIVE M. McCAY, Ph.D., Professor of Nutrition, Cornell University, Ithaca, N.Y.

Condensed from Transactions of the College of Physicians of Philadelphia, Aug. 1952

As one grows older and his comprehension of the interplay between the factors that govern human health increases, he appreciates the great difficulty of segregating any series of facts into one scientific cell.

At times one may become pessimistic in applying nutrition knowledge because he feels like the professor who told the college graduating class that about half of all they had learned was not true. He said, "The chief prob-

lem of the professor was that he was not sure which was the true half."

Likewise in application many of us are like the Maine farmer who listened patiently as the enthusiastic extension worker described better ways of farming. Finally the silent farmer said, "What's the use of learning any more new methods. I only do a fourth of the worthwhile things that I already know." As people grow older and become more rigid in their food habits they probably follow less and less the meagre nutritional knowledge they have acquired earlier. From our observations in some of the areas in which large numbers of retired people live we have become convinced that backwardness in using current knowledge of nutrition is characteristic of only a fraction of older people.

Time does not allow the survey of basic science fields dealing with substances of nutritional importance other than calcium but if one did this today, he would come to certain conclusions as a guide to practical nutrition of the aged. We might set these goals as follows:

1. Keep the body thin on a modest diet adequate in protein, minerals and vitamins but low in calories contributed by sugar, purified cereals and fats.

2. Special attention needs to be devoted to insuring an adequate supply of assimilable calcium and protein for those in the latter half of life.

3. Since most of the eleven million older people must live upon modest incomes, practical diets must be economical and based upon inexpensive foodstuffs.

All of us are then faced with these practical aspects of food in later life. Over the years certain plans of action have been formulated.

The first of these concerns the improvement of basic foods that can be afforded with a modest budget. The most obvious of these is bread. For this reason during the past decade we have given much attention to the improvement of white bread. As nutri-

tionists we would prefer to have people consume bread made partly from whole grains but since public tastes are oriented toward white breads we have given most attention to these. Therefore we have evolved the formula that has the highest possible nutritional value at a modest cost. The best bread we can make today contains 2% wheat germ, 6% high fat soy flour and 8% non fat milk solids. This bread has an excellent taste as well as high nutritive value. This bread was first developed for the mental hospitals of New York State, since these hospitals care for more than thirty thousand people over 65 years of age. This bread is now used in the school lunch program in many of the larger cities of New York.

In any plan of feeding older people it would seem obvious that one should decrease to a low level foods that provide only calories such as sugar, starch, cooking fats and alcohol. One should attempt to increase moderately priced foodstuffs that contribute protein, calcium and vitamins. Such foodstuffs are non fat milk solids, wheat germ, soy flour and dried yeast.

It is hard for us in this year 1952 to imagine life in earlier times, when often a third—sometimes a half—of the children born died before their first birthday. That pattern still exists in large areas of the earth. In India today, of 100 children born, only 20 reach adulthood. So high is India's birth rate that in spite of this gruesome mortality, the population increases. Though many million died of hunger and disease, India's population increased 83 million between 1920 and 1940. Present increase is even more rapid—over five million a year. Because of the high birth rate—it is estimated to be about 45 per thousand—a lowering of the death rate would result in a fantastic increase in population—if—and this is a very big if—if food could be provided to feed all these new mouths. To lower the death rate without providing means of sustenance

means inevitable famine. During 1951 the port facilities of India were taxed to the limit to handle the wheat shipped from abroad. The opening up of new lands in very large reclamation

projects is taking care of only about one-thirtieth of the annual increment in numbers.—Robert C. Cook, Managing Editor, Jour. of Heredity.

Think victory and life becomes rich in achievement, think disaster and you will get it.—Capt. Eddie Rickenbacker.

ANNOUNCEMENTS

● **UNIV. OF TORONTO, FACULTY OF DENTISTRY CONTINUATION COURSES** for graduates in Dentistry:—**PERIODONTICS**, Jan. 19-23 under direction of Drs. H. K. Box and C. H. M. Williams. Fee \$75.00. Enrolment Limit 14. **CEPHALOMETRIC TECHNIQUES**, Jan. 26-28, under direction of Dr. Robert E. Moyers with Dr. H. Margolis of Tufts College as guest clinician. Fee \$50.00. Enrolment Limit 10. **OPERATIVE DENTISTRY**, Feb. 16-20, under direction of Dr. P. G. Anderson. Fee \$75.00. Enrolment Limit 10. **DENTAL RADIOLOGY**, Feb. 23-27, under direction of Dr. J. E. Moser with Dr. H. M. Worth as guest lecturer. Fee \$75.00. Enrolment Limit 12.

Apply, The Dean, Faculty of Dentistry, Univ. of Toronto, 230 College St., Toronto 2-B, Ontario.

● **75th ANNIVERSARY, UNIVERSITY OF PENNSYLVANIA**, June 10-12, 1953. Dr. LeRoy M. Ennis has been appointed chairman of the Celebration Committee.

The committee is very desirous of receiving messages from Alumni in foreign lands for this occasion. These messages will be placed in the historical record.

● **THE FOURTH ANNUAL BERKSHIRE CONFERENCE IN PERIODONTOLOGY AND ORAL PATHOLOGY**:—Tufts College Dental School Postgraduate Division will conduct an advanced conference in Periodontology and Oral Pathology under the direction of Dr. Irving Glickman and staff, at Eastover, a resort hotel in Lenox, Massachusetts, June 14-18, 1953. The conference will consist of four days of lectures, seminars, and panel discussions regarding clinical problems by outstanding teachers and clinicians in dentistry, medicine, and their related fields.

For further information write Berkshire Conference, Tufts College Dental School, 136 Harrison Avenue, Boston 11, Mass.

● **THE NEW YORK UNIVERSITY COLLEGE OF DENTISTRY** is offering the following **POST GRADUATE COURSES TO GRADUATE STUDENTS OR PRACTISING DENTISTS**. The 1953 Calendar includes courses in the following subjects: Anatomy (head & neck); Airbrasive (given monthly); Biostatics; Ceramics (including acrylics); Crown & Bridge; Inhalation Anaesthesia; Obturators (dental); Operative Dentistry; Oral Diagnosis & Treatment Planning; Oral Surgery; Orthodontics; Pathology; Pedodontics; Periodontia; Physiology & Biophysics; Research in Physiology; Seminar in Physiology; Practice Management; Precision Attachments; Prosthetics (Full Denture Prosthetics, Partial Dentures, Immediate Dentures); Public Health Administration; Pulp Canal Therapy; Roentgenology; Tumours of the Oral Cavity; Surgical Anatomy. Apply Postgraduate Division, N.Y. Univ. College of Dentistry, 209 East 23rd Street, New York 10.

● **A WORLD CONFERENCE ON ENDODONTICS** will be held June 21-27, 1953 at the School of Dentistry, University of Pennsylvania. Participating in this Conference will be outstanding leaders in the field of Endodontics, such as Dr. Francisco Pucci of Montevideo, Uruguay; Dr. W. Stewart Ross of London, England; Dr. B. Nygaard Ostby of Oslo, Norway, and others from Canada and the United States. The Conference will be under the direction of Dr. Louis I. Grossman. The tuition fee is \$100.00. Applicants should make direct inquiries to—Postgraduate Courses, School of Dentistry, University of Pennsylvania, Philadelphia 4, Pennsylvania.

● **THE GROWTH AND DEVELOPMENT OF THE NEGRO IN DENTISTRY** in the United States by Clifton O. Dummett, D.D.S., F.A.P.H.A., Chief, Dental Service, Veterans Administration Hospital, Tuskegee, Alabama. Published by National Dental Association. Price \$5.00.



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Editorial

THE QUALITIES THAT WIN

As we enter a new year the dental profession faces many problems and in dealing with these matters certain general qualities are of paramount importance if we are to win. It is not the thought to enumerate these problems, for there are many well known to all of us, but rather to outline a few fundamental principles for dealing with any problem.

Dr. F. M. R. Walshe of London, England, in an address delivered before Convocation, Faculty of Medicine, University of Toronto, last June, as published in the Canadian Medical Association Journal said this, in part:

"Thomas Linacre, who was physician to King Henry the Eighth and founder of the Royal College of Physicians of London in the sixteenth century, also founded what is the oldest medical lectureship in England and he expressed the wish in his Deed of Gift that the lectures should 'redound to the Glory of God, the relief of the fallen and the increase of the realm'. What better ideal of the vocation of the doctor can we put before ourselves 300 years later? If we accept it, then we accept with it moral responsibilities and we look upon man as having here no abiding city but a destiny beyond this world. This view must colour our attitude towards our patients, and will help us to consider their welfare first and individually, and to remember that they are men and women like ourselves, with their hopes, fears, aspirations, griefs and joys, their ideals and their human frailties. All this is to say that the Hippocratic Oath is still binding on us, and that it is one of the aspects of the unchanging face of medicine.

"This aspect of medicine which demands prudence I shall call humanism, not the secular humanism of the ancients, but a humanism infused with the Christian ethic. Without this, medicine must degenerate into a chaos of techniques devoid of moral purpose."

Yes, the Hippocratic Oath is still binding on us as dentists as on the physician guiding us as a "pillar of cloud" by day and a "pillar of fire" by night.

If we are to win we must respect our profession. Dr. Oliver Wendell Holmes said, "If you do not feel as you cross the millionaire's threshold that your Art

is nobler than his palace, the footman that lets you in is your fitting companion and not his master. Respect your profession and you will not chatter about your 'patrons' thinking to gild yourself by rubbing against wealth and splendour. Be a little proud—it will not hurt you; and remember that it depends on how the profession bears itself whether its members are the peers of the highest, or the barely tolerated operatives of society."

Dentistry with its present ideals and its research efforts need not take second place to any profession. We should be proud of our profession and do everything within our power to uphold it.

Noble character, intellectual excellence, lofty ideals, conscientious labour, public spirit, self-criticizing patriotism which fosters only what is worthy, are the qualities that measure the greatness of the members of the dental profession. Such members are the harbingers of the future and who justify our faith in the future of dentistry as we enter 1953 with its great world problems.

In a sense we have been discussing ethics, for without high standards we can accomplish nothing worthwhile. Fundamentally, ethics must be legal, just, equitable, and must be in accord with the best practices and customs of a community. Self-interest must be submerged in the practice of universal morality. The methods of doing business have radically changed through the years but the moral structure has not changed, the basic meaning and strictness have not been relaxed or abrogated.

As already quoted in a previous issue of the journal, the great Rabbi Hillel was visited by some wise man who asked if he could give the essence of the Law and Prophets in the length of time he could stand on one foot. "Certainly," replied the Rabbi. Drawing up his foot he said, "That which is hateful to thee, do not thou to another. All the rest is commentary."

These are but a few of the "Qualities that Win" and to these I would add Virtue, if not included in what has been said. Reject what you consider false, examine what you look upon as doubtful and remember what is true. Milton wrote the following exquisite lines on virtue:

"Mortals, who would follow me,
Love Virtue, she above is free,
She can teach ye how to climb
Higher than the spherie chime.
Or if Virtue feeble were,
Heaven itself would stoop to her."

M. H. G.

CORRESPONDENCE

To the Editor:

May I be permitted, at this late date, to offer my congratulations to your Association on the occasion of its Golden Jubilee.

I was very interested in the journal you sent me and was most impressed with its setup and its subject matter. It has been received with pleasure in the library of our Auckland

Branch of the New Zealand Dental Association.

Will you be good enough to accept my apologies for this late acknowledgement of your courtesy? I have been ill with pneumonia for some months, and have just lately returned to my practice.

Signed J. Stewart Kinnear

I cherish the old-fashioned values of hard work, hard work and hard work . . . I believe that if one works hard, rewards accrue in the natural order.—Jack Kent Cooke.

BOOK REVIEWS

Essentials of Surgery for Dental Students by J. Cosbie Ross, M.B. (Hous.), Ch.M. (Liverpool), F.R.C.S. (England). Second Edition, 1952. Published by the Macmillan Company of Canada. Price \$5.25.

This book of 296 pages with 207 illustrations deals briefly with many of the diseases and malformations of the oral cavity and related parts. The author has made an attempt to stress the relationship between oral lesions and systemic disease. In dealing with the topic of chemo-therapy, the importance of well-planned surgical procedures is stressed, a point which is so often overlooked.

The chapters on tumours presents a simple and easily understood classification with a brief suggestion as to proper treatment. With reference to abnormal movements and discomfort of the temporomandibular joint there is no reference to malocclusion or lack of vertical dimension as a causative factor, something which is receiving a great deal of attention on this continent at the present time.

The space devoted to the treatment of fractures is limited to the point where it might have been better to have omitted it entirely and advised the dentist to refer his cases elsewhere. As an example, one page only is devoted to fractures of the maxilla.

The chapter on plastic surgery includes correction of retrusion and protrusion of the mandible by horizontal sectioning of the ramus but makes no mention of other procedures which in many cases are preferable.

The book deals with a wide variety of subjects and the author, in the prefix, mentions the aim at classification, brevity, and simplicity. The brevity for many will be the basis for criticism. The uninitiated student or inexperienced young graduate might be led into attempting cases beyond his ability, whereas a more detailed description would tend to create an attitude of greater caution. "A little knowledge is a dangerous thing."

It is not a book which is likely to meet with much approval in most of the training programs of the schools on this continent.

W. Scott Hamilton

■
Introduction to Dental Anatomy, by James H. Scott, B.Sc., M.D., L.D.S. and Norman B. B. Symons, M.Sc., B.D.S. Published by E. & S. Livingstone Ltd, Canadian

agents, the Macmillan Company. Price \$6.75.

The authors state that the book is intended to fill a gap in dental textbooks. It serves to link up the instruction in the basic medical sciences of Anatomy, Physiology, Biochemistry, etc. with the clinical courses in Operative, Oral Surgery and Orthodontics.

The book consists of approximately 280 pages of well-illustrated text and is supplemented by a good Glossary and Index. There is a good description of the oral tissues with chapters on "Movements of the Teeth and Associated Tissue Changes", "Growth of the Face", "Relation of Structure and Function in the Mouth during Mastication", "Summary of Age Changes in Teeth and Jaws", etc.

The last third of the book is devoted to Comparative Dental Anatomy. This text is well designed to serve the purpose for which it is intended and will supplement and link together the more specialized texts.

J. Stanley Bagnall

●
The Newer Knowledge of Hygiene in Diet, by J. Sim Wallace, M.D., C.M., D.Sc., L.D.S., F.D.S.R.C.S., Eng., F.A.C.D., Emeritus Lecturer in Preventive Dentistry, King's College Hospital. Formerly Dental Surgeon and Lecturer on Dental Surgery and Pathology, London Hospital. 259 pages. Published by the Dental Items of Interest Publishing Co., Inc., Brooklyn, N. Y.

This book is the last contribution of the late J. Sim Wallace in the field of modern dietetics. Wallace is primarily recognized for formulating a regimen introducing into the daily diet those foods, "which, by their fibrous and sapid nature, would encourage flow of saliva and by the exercise of mastication, stimulate the growth of the jaws, and at the same time have a detergent effect upon the teeth and gums". The book sets out to give in a historical sequence the events which led the author to adopt these views.

The reader is introduced to the subject by a review of the major developments in our knowledge of diet and nutrition. Great emphasis is placed on the relationship between diet of civilized man and the enormous increase in the prevalence of dental caries. Methods of preventing dental caries are those based on the use of foods of more solid consistency.

The book is not to be regarded as a major scientific treatise on the subject of dental caries. It is devoted to one phase of the dental caries problem. Quotations from other publications are numerous to the point of being redundant. It is unfortunate that the graph on p. 120 and the illustration on p. 194 were not better reproduced. The bibliography at the end of each chapter is a valuable feature of the book.

Gordon Nikiforuk

The Symptoms and Treatment of Acute Poisoning

by G. H. W. Lucas, Professor of Pharmacology, University of Toronto. Published by Clarke, Irwin & Company, Ltd., 308 pages. Price \$5.00.

Professor Lucas is a leading authority on this continent on the subject of poisons and

the treatment of poisoning. His years of practical experience and research lend this book special authority; the first of its kind in Canada.

The author deals with 130 poisons with reference to their history, fatal dose, symptoms of poisoning, treatment and recommended emetics. A chapter is devoted to accidental poisoning in children. More than 40 useful drugs and preparations are described, their source of supply indicated, and doses recommended. There are tables of fatal doses, and of approximate equivalents and domestic measures. The index is arranged so that information can be obtained quickly.

This book should prove of real value to the dentist as well as the physician.

M.H.G.

ROYAL CANADIAN DENTAL CORPS NEWS

1 Brigadier E. M. Wansbrough, Director General Dental Services, attended a Meeting of the Association of Military Surgeons, held in Washington, D.C., November 17-22.

2 Staff-Sergeant J. A. L. Jacob of No. 15 Coy. R.C.D.C. has been promoted to the rank of Lieutenant and appointed Quartermaster in No. 15 Coy. R.C.D.C.

3 The following personnel of the Royal Canadian Dental Corps, who have served in Germany with 27 Canadian Field Dental Unit for the past year, have returned on rotation:

Majors W. I. Whitehead, J. Durand and L. G. Craigie

Cpts. F. D. Charman, H. J. Chart-rand, J. E. Hughson, J. A. A.

Patenaude, L. A. Richardson and G. E. Windsor

Sgts. S. G. Fraser, F. H. Habart, G. L. Gibson, H. B. Weir, A. J. Greco, G. H. Couture and E. E. Mazerall.

4 Capt. J. M. R. Gourdeau, Sgt. G. Shand and Sgt. E. B. Morse have returned from Korea where they served a year with 25 Canadian Field Dental Unit. They have been replaced by Capt. F. B. Lavoie, Sgt. H. C. Bilbey and Cpl. J. M. Tapp.

5 Lieut.-Col. W. E. Meldrum, Commandant, The Royal Canadian Dental Corps School, Ottawa, attended a course at the U.S. Naval Dental School, National Naval Medical Centre, Bethesda, Md., November 17-22.

CANADIAN DENTAL ASSOCIATION NEWS

FROM THE OFFICE OF THE SECRETARY

1954 Annual Meeting:—Arrangements have been completed for the 1954 Annual Meeting to be held at the Algonquin Hotel, St. Andrews-by-the-Sea, New Brunswick. The dates of the meeting are:

Board of Governors—September 2-5.

Convention—September 6-9.

The meeting is being held in cooperation with the New Brunswick Dental Association. The 1953 meeting will be held in Montreal on the following dates:

Board of Governors—October 14-17.
Convention—October 18-21.

■
Assistance to Graduates of Foreign Dental Schools:—In spite of the effort that has been made by Canadian dental schools, the provincial dental councils and boards and the Canadian Dental Association to assist graduates of foreign schools, a good deal of adverse newspaper publicity has been heaped upon the dental profession as well as the other

professions. Quite obviously those offering criticism have little or no knowledge of the problems involved. We have known for a long time that those who qualify under the regulations governing the matter are the first to commend the system. Recently a letter of drastic complaint on this subject appeared in the Edmonton Journal. It is most gratifying to read a reply published a few days later and signed by six graduates in dentistry from foreign schools. The reply in full follows:

"Sir:—We are a group of graduates in dentistry from European universities. Our former homes were in Latvia, Lithuania and Germany. We are not familiar with the treatment accorded other professional groups, but would appreciate an opportunity of bringing to the public our own experiences.

"Since the letter by Per Givold, which appeared in the Journal on October 21, constitutes an unjust attack on the regulations and requirements in this country, we wish to defend those who have done most to assist us in becoming re-established in our profession and to enjoy freedom in our mode of living.

"Two of us graduated from the University of Alberta in May, 1952, and are now established in practice, two are in the senior class and hope to graduate next year, and the other two are in the junior class.

"We, too, were disappointed when we were told that European degrees were not recognized in this country, but we were very soon to discover the reason.

"The university has developed a procedure for assessing professional suitability and qualifications, a copy of which is available from the registrar's office. All of us have been through it and at no time did anyone make things difficult for us, and yet we realize how perplexed they must have been at times over our language deficiencies. It was at this time that we fully realized the difference between the standards in Canada and the places from which we came. It would not be just for us to expect admission to practice on a lower standard than the citizens of Canada demand of their own sons and daughters.

"At the end of the series of tests we were each given full credit for our knowledge in each subject, and individual time-tables were arranged. In

spite of crowded quarters we have been permitted to proceed with our training for which we hope in future years to demonstrate our gratitude.

"None of us had a financial backing except what we have been able to earn, and while funds for assisting students are very limited, we have the same privileges as others in applying for loans. In one instance the Rotary Club made it possible for one of our number to continue, and individual citizens have also been most considerate.

"In view of our experiences we cannot agree with those who choose to condemn this country, which opened her doors to us when we were in need of a home where freedom prevails."

Olaf Uimanis
Nikalojus Novosickis
Claudia Stegmanis
Beatrice Kalejs
Anna Rudovics
Hans Fast.

Edmonton.

Dental Educational Facilities Assessed in United States:—The United States Public Health Service has just published an 83-page booklet as a result of a detailed survey of the financial status and needs of dental schools in the United States. In issuing the report, Dr. Leonard A. Schule, Surgeon-General of the Public Health Service said, "Mounting costs of dental education have hit hard at the nation's dental schools." Of the 40 schools studied 16 of them reported operating deficits totaling \$1,600,000. The report emphasizes the unmet needs of the schools, particularly for additional research facilities and staff, for which it is estimated \$60,000,000 is required.

Fees paid by students provide one-third of the income of dental schools in United States schools. The necessary balance must be secured from appropriations from government and municipal bodies. Only 5% of income is from endowments, gifts and grants. Dr. Schule states that the uncertainty of assured future income gravely limits the ability of U.S. dental schools to plan for the future and to meet their most critical needs.

The report was made by the Public Health Service at the request of the Council on Dental Education of the American Dental Association. The A.D.A. appointed a five-member committee to serve in an advisory capacity.

Some people never change their opinion because it's been in the family for generations.—R. & R. Magazine.

ANNOUNCEMENTS

● 1953 will be the last opportunity for any who have failed the **DOMINION DENTAL COUNCIL OR THE DENTAL COUNCIL OF CANADA EXAMINATIONS** to re-take the portion of the examination they failed. This will be the last set of examinations held under the Dental Council of Canada as the National Examining Board will carry on henceforth.

The date for the spring examinations has not been set but they will likely commence the 18th or 25th of May. Any candidates wishing to complete their examination and receive a certificate should contact the secretary as soon as possible.

A. J. Brett, Secretary,
202 Kerr Block, Regina, Sask.

● **RESEARCH GRANTS IN DENTISTRY**:—The Associate Committee on Dental Research of the National Research Council of Canada is offering Fellowships for graduates in dentistry to provide advance training and experience in research in one of the sciences basic to dentistry. Grants-in-Aid are also available for projects related to research in dentistry.

Apply to S. J. Cook, Secretary Associate Committee on Dental Research, National Research Council, Ottawa, Canada.

● **MIDWINTER MEETING, CHICAGO DENTAL SOCIETY, FEBRUARY 8-11**:—Forty-one essayists will present a group of formal lectures combining theory and practical methodology in all of the accepted branches of dentistry, 57 limited attendance clinicians will present 137 clinics and there will be 73 table clinics.

For information apply to Chicago Dental Society, 30 North Michigan Avenue, Chicago 2, Illinois.

● **MINNESOTA STATE DENTAL ASSOCIATION** Convention, February 23-25, Minneapolis, Minnesota.

● **THIRTY-FIRST GENERAL MEETING OF THE INTERNATIONAL ASSOCIATION FOR DENTAL RESEARCH** March 20-22, 1953, Philadelphia, Benjamin Franklin Hotel.

● **WESTERN CANADA DENTAL SOCIETY CONVENTION** will be held at Jasper Park Lodge, Jasper, Alberta, June 14-18, 1953.

● The **MARITIME DENTAL CONVENTION** is to be held at Keltic Lodge, Ingonish Beach, Sept. 3-5, 1953.

● **UNIVERSITY OF TORONTO, FACULTY OF DENTISTRY GRADUATE COURSE IN ORTHODONTICS**: Applications will be received up to March 2 for the graduate course in Orthodontics at the Univ. of Toronto. The course commences on September 1, 1953, and continues for a period of seventeen months. Enrolment is limited to six graduates of approved dental schools. Applicants must possess satisfactory scholastic standing acceptable for enrolment for the Master of Science (Dent.) degree in the School of Graduate Studies of the Univ. of Toronto.

For further information apply:

The Dean, Faculty of Dentistry, Univ. of Toronto,
230 College Street, Toronto, Canada.

● **POSTGRADUATE COURSES, COLLEGE OF DENTISTRY, OHIO STATE UNIVERSITY, 1953**: Jan. 12-16—Full Denture Prosthesis; Jan. 19-23—Periodontics; Jan. 26-30—Children's Dentistry; Feb. 2-6—Oral Surgery; Feb. 16-20—Partial Denture Prosthesis; Mar. 2-6—Endodontics; Mar. 9-13—Airbrasive Technique.

Each course is given for five consecutive days, Monday through Friday, and the enrolment is limited to ten per class. Fee \$50 per course with the exception of Oral Surgery, Endodontics, and Airbrasive Technique for which the fee is \$100.

Apply Postgraduate Division, College of Dentistry, Ohio State University, Columbus, 10, Ohio.

● **50th ANNIVERSARY OF "LA REVUE BELGE DE STOMATOLOGIE"**: For the purpose of commemorating the fiftieth Anniversary of la Revue Belge de Stomatologie, official publication of la Societe Belge de Stomatologie and l'Association des Licencies et Dentistes Universitaires de Belgique, the Administrative Councils and these two societies have decided to organize in May 1953, an International Congress. The Congress will be arranged by Doctor H. Priem de Gand.

All those who may have lectures, table-clinics or films to present at the Congress, please address them to the president, 1, Place Prof Laurent, Gand, Louvalne, Belgium.

NEWS FROM THE PROVINCES

BRITISH COLUMBIA

Dr. James R. Jensen, Endodontist of the School of Dentistry, University of Minnesota, was guest speaker at the December meeting of the **Vancouver and District Dental Society**.

At the afternoon meeting, Dr. Jensen's subject was "Simultaneous Apical Currtage and Root Canal Therapy". Slides and a brief film illustrated the subject matter.

In the interim between afternoon meeting and dinner, the Visual Education Committee presented a film loaned from the U.S. Navy, entitled "Factors in the Construction of Full Mandibular and Maxillary Dentures".

After dinner, the versatile speaker addressed the meeting on the subject of "The Behaviour of Autoseal Resins in Operative Dentistry". A description of exhaustive research in the University of Minnesota on this subject interested the large number attending, and a film illustrating the technique recommended was followed by a question period.

The January meeting of the Society, as usual, scheduled Home Talent. This annual meeting has featured presentations, by chair and table clinics, of local practitioners for some years past, and the program is always a most popular one.

Program of the "Home Talent Meeting" January 13th, 1953

Chair Clinics—3.00 to 5.00 P.M.

- Surgical Procedure in the Insertion of an Immediate Full Upper Denture Dr. Frank Smith
 - Gold Foil Filling Dr. George Darts
(Vancouver Ferrier Study Club)
 - Root Canal Procedure in Apicoectomy Dr. K. Donnelly
..... Dr. Jas. Marshall
(Endodontic Study Club)
 - M.O. Alloy in First Permanent Molar Dr. Lorne Lind
(Pedodontic Study Club)
 - Rubber Dam Application on Deciduous and Mixed Dentition ... Dr. Malvin Panar
(Pedodontic Study Club)
- ##### Table Clinics—8.00 to 10.30 P.M.
- Clinical Photography Dr. R. Cline
 - Rehabilitation of the Prosthetic Patient Dr. M. Pottinger
 - Class Four Pin Inlays ... Dr. L. W. Beamish
 - Some Uses of Prefabricated Gold Pins Dr. M. Chechik
 - Gold Foil (Vancouver Ferrier Study Club) Dr. J. Ingledew
..... Dr. D. Sutherland

- Endodontics Discussion
"Questions and Answers" Dr. J. Friedman
..... Dr. M. Krosnoff
(Endodontics Study Club)
- Exodontia and Oral Surgery Dr. H. Simmons
- Office Use of Bacterial Media in Caries Control Dr. R. O'Neill
(Pedodontic Study Club)
- A Report of a Study of Vital and Non-vital Pulpotomy Dr. O. Wright
(Pedodontic Study Club)
- A Lower Swivel-Bar Denture Dr. W. Sproule

At a recent meeting of the **Executive Committee of the B.C. Dental Association**, plans were initiated for the annual meeting and convention, to be held at Hotel Vancouver, in Vancouver, May 8-9, 1953.

The Dental Public Health Committee, in its report to the Executive Committee, recommended that a demonstration of dentistry for children be held at various points in the interior of the province, in order that practitioners in those areas might be encouraged to undertake a greater proportion of this work in their practices. The executive committee endorsed the recommendation, and will undertake to develop the plan in the near future.

■
The Division of Preventive Dentistry of this province is considering the establishment of bursaries for the training of dental hygienists for subsequent employment by the Division, and by the Metropolitan Health Committee in Greater Vancouver.

■
The College of Dental Surgeons of B.C. has announced that the first examination for **Dental Hygienists** in this province, held recently, resulted in the acceptance of one candidate, a graduate of the School for Dental Hygienists at the University of Oregon, and the wife of a dentist practising at Campbell River, on Vancouver Island.

ALBERTA

Central Alberta Dental Society: — At the first fall meeting of the Central Alberta Dental Society held in Red Deer, October 23, the following were elected for the 1952-1953 term:—

President—Dr. M. S. Boyce, Rocky Mountain House, Alberta.

Vice-President — Dr. A. Urschel, Camrose, Alberta.

Sec.-Treas. — Dr. S. Fleming, Red Deer, Alberta.

The Board of Directors to include the following:

Dr. J. B. Long—Red Deer, Alberta.

Dr. C. A. White—Red Deer, Alberta.

Dr. G. Travis—Red Deer, Alberta.

Dr. O. L. Oatway—Red Deer, Alberta.

Dr. D. Culhan—Ponoka, Alberta.

Dr. C. T. McNichol—Didsbury, Alberta.

Following the business meeting Dr. W. Scott Hamilton, Dean, Faculty of Dentistry, University of Alberta, presented a most interesting paper entitled "Oral Surgery for the General Practitioner". Dr. Hamilton illustrated his lec-

ture with coloured slides. The members of the Central Alberta Dental Society were honoured by having such an outstanding clinician as Dr. Hamilton.

At the November 19 meeting of this Society, Dr. R. V. Blackmore of the Faculty of Dentistry, University of Alberta, presented an enlightening clinic on "Recent Techniques in Root Canal Therapy". It is planned to entertain the members' wives on December 10. The evening's entertainment will include a banquet, floor show, bingo and dance.

Edmonton and District Dental Society:—The outstanding meeting of the year was held in the MacDonald Hotel, October 10 on the occasion of the annual visit of the President and Secretary of the Canadian Dental Association.

Two new members of the society were introduced—Drs. Kowalchuk and Novitskiss. Dr. Campbell of Lamont was welcomed. The business portion of the meeting was dispensed with, due to the importance of the occasion.

Dr. R. A. Rooney then introduced the President of the Canadian Dental Association—Dr. Gustave Ratté of Quebec City. Dr. Rooney mentioned the many fine qualities possessed by Dr. Ratté. Dr. J. D. McLean expressed appreciation to Dr. Ratté for his very provocative message and also thanked him for the efforts he had taken to visit Edmonton and for the service he was doing dentistry. Dr. McLean presented him with a gift for Mrs. Ratté.

Dr. W. Scott Hamilton then introduced Dr. Don W. Gullett. Dr. Hamilton felt Dr. Gullett had been overlooked for too long in the introductions, particularly where the younger practitioners were concerned. Therefore Dr. Hamilton outlined Dr. Gullett's many contributions to our profession. Dr. Don McIntyre thanked Dr. Gullett for his very informative and particularly important talk.

Dr. Alan Fee was appointed chairman of the sick committee with Dr. Andy Revel adviser. Dr. D. F. McIntyre was appointed correspondent to the Canadian Dental Association Journal.

Dr. Bill McIver presided at the November 4 meeting of the Edmonton and District Dental Society, 66 members being present.

Two Korean veterans, presently stationed in Edmonton were welcomed—Garth Evans and Johnny Harms. Out-of-town members introduced were, Bill Dunbar, Camrose and Tom Demco, Vegreville. Dr. Anna Rudovics, Dr. A. Thompson and Dr. G. Geldart were the new members introduced.

Dr. Ken Gordon then introduced the guest of the evening—Mr. A. Benson,

Registered Medical Assistant; Licentiate of the College of Speech Therapy, London, England. Mr. Benson is on the staff of the Provincial Cerebral Palsy Clinic. Dr. Al Urban thanked Mr. Benson for his presentation.

Dr. McIver introduced Don Pedlar, 3rd year scholarship winner and Bill Kirstine, 2nd year scholarship winner who were guests for the evening.

Dr. Charles Duke was elected Secretary of the Western Canada Dental Society. Dr. Duke succeeds Dr. Jack Neilson. Dr. Duke will assume a tremendous task as Secretary of the Western Canada Dental Society. As the convention time approaches the tempo of activity increases. The new Jasper Park Lodge will be constructed in time for the Western Canada Dental Society Convention next June.

On November 24, the **Calgary Dental Society** was treated to a convincing demonstration of the practical value of Study Clubs. Seven members of the Edmonton Periodontal Study Club gave afternoon and evening clinics in the Sun Parlors of the Palliser Hotel. Before and after treatment slides were shown to emphasize important aspects of Diagnosis, Treatment and Home Care.

Dr. H. Samuels, Associate Professor of Periodontia, University of Alberta, was guest speaker for the evening. His subject was "Surgical Techniques in Periodontia". The Society is pleased that the Faculty of Dentistry has acquired another outstanding Clinician.

Each member of the panel gave an illustrated case history of a special case.

The members taking part in the Clinic were: Dr. W. Webber, President, Dr. Bruce Cameron, Sec.-Treas., Drs. Don Gilmore, Jack Jackson, Vic Lloyd, Harold Samuels and Dunc Stewart.

Dr. Vic Lloyd left Calgary by plane to take over as Master of Ceremonies of the C.P.R. Grey Cup Train.

Dr. R. T. Shillington thanked the clinicians for their clinics.

Well done, Edmonton!

SASKATCHEWAN

Prince Albert Dental Society.

President, Dr. Norm Godfrey
Sec'y.-Treas., Dr. Lorne Connell

At the first meeting this fall Dr. Wm. Simon presented a very interesting clinic. On the occasion of the second meeting Dr. R. D. Reid reported on the transactions of the annual meeting of the Provincial Council. Dr. Reid reported particularly on the status of the Hygienist in this province, the dental services in the Health Regions and some aspects of

the Annual Report of the C.D.A. and more particularly the National Examining Board.

Moose Jaw Dental Society.

President, Dr. Lloyd Miller.

Vice-Pres., Dr. Andrew Wong.

Sec'y.-Treas., Dr. Irwin Hyman.

The Society is very pleased to have many of the dentists from outside points attend the Telephone Extension Course.

L. D. H.

MANITOBA

The October clinical meeting of the **Winnipeg Dental Society** 1951-52 winter program was held on October 19.

The clinician was Dr. Helmut A. Zander, Professor of Periodontology, University of Minnesota. Dr. Zander was in Winnipeg last year for a day which he spent talking about his work on the pulp, and which he had done while at Tufts Dental School. The large turnout to hear him again on an entirely different subject gives full credit to his ability as a clinician.

Many who feel that Dr. Zander has one of the keenest scientific minds in the profession today were not disappointed by his story of the research work he has done in the past year on the formation of calculus and a preview of some of the projects just beginning in his Department at Minnesota. Approaching the study of periodontology with an open mind and his scientific background Dr. Zander has already started to explore several new avenues of study in this subject. Beautiful colour slides in high magnification were augmented by a colour movie with attached sound track of the clinician's voice, a new process particularly suited for clinics of this type.

T. J. Cooke

ONTARIO

The **Annual Winter Clinic of the Academy of Dentistry, Toronto**, was held on November 27 in the Royal York Hotel. There were close to 450 dentists in attendance with 135 of them guests from outside Toronto. The program of the day was in charge of the Clinic Committee under the Chairmanship of Dr. Elmer Henderson, President-elect of the Academy.

Both the luncheon and dinner meetings were well attended and conducted in good taste and a warmth of atmosphere. Mr. Joseph McCulley, Warden of Hart House, University of Toronto was guest luncheon speaker who spoke on the subject "Our Youth of Today." His address was thought provoking and a well-thought-out appraisal of youth problems and our young people's ability to cope with them. He made a trite statement by saying "Character is caught

not taught" then went on to suggest that more money be spent on trained leadership and less on elaborate accommodation and facilities. He stated that there was no major youth problem but that we have thousands of young people growing up in a confused world and it is our responsibility to provide a climate of appreciation for the greater things of life in a spiritual sense. Mr. McCulley expressed himself as convinced that youth today are as capable and responsible as at any time, even more so, and suggested we should not render hasty judgment of youth as a group by the few who are conspicuous by injudicious acts.

Dr. Gustave Ratté, President of the Canadian Dental Association attended from Quebec city to bring greetings from our National Association. After reviewing the work of the Association he indicated some of the tasks yet to be performed across Canada by our profession. He complimented the Toronto organization for its enthusiasm and ability to do things and then concluded by suggesting that because of their accomplishments today and in the past even more is expected of them in the future.

The scientific program of the day provided something for every taste. Dr. Marjory Jackson gave a splendid lecture on "Preventive Pedodontia for the General Practitioner"; Dr. R. E. Moyers indicated the orthodontia cases a general practitioner should undertake and, as usual, his presentation was very instructive. Dr. J. D. Purves discussed the use of hydrocolloids in dentistry, and those using this material in operative dentistry could take home a number of helpful hints. Dr. "Mac" Sheldon gave a lecture on direct gold inlays in his usual meticulous style and his hearers were very appreciative. Dr. Gordon Johnston in his usual quiet way gave everyone a lift by way of improving their amalgam technique. Dr. Parks gave an illustrated lecture on Endodontics and his room was filled to capacity—rightly so, because he was good, and moreover, the patronage given his lecture is an indication of professional interest in the newer principles of treatment in root canal therapy. Dr. Jack Moser gave a lecture demonstration on the extended cone technique for taking radiograms.

The Ontario Dental Oral Surgeons, represented by four of their members, gave a symposium; Dr. Joe Johnson on premedication, Dr. Bert Diprose on radiographic interpretation; Dr. George Morgan presented a motion picture and Dr. W. L. Chalmers on post-operative care.

Dr. Wilf. Clark of Hamilton demonstrated his grasp of full denture problems and his ability as a teacher, by his

lecture on the newer concepts of full denture construction. He had a wealth of ideas for the refinement of our full denture procedures which all could take home to improve their technique.

Dr. Oliver C. Applegate from the Dental School of the University of Michigan presented a paper illustrated by coloured slides on the subject "Two Critical Phases of Partial Denture Services." These phases are summed up in two points—(1) Good partial dentures must have the greatest distribution of the work load over as wide an area of tissue support as possible. (2) Balanced occlusion in all functional movements of the mandible.

Dr. Applegate gave suggestions for securing the best results in dealing with these problems in taking the impression of soft tissue under pressure, splinting weak abutments, use of metal bases, taking the functional bite relation and finishing the cases. His technique called for skill and no short cuts but the results appeared to be worth it all.

For the dentists who wanted some ideas on the use of leisure time Dr. Sisley had some interesting information on photography and Mr. Moddle demonstrated how to do some wood carving.

This review of the day's activities would be incomplete without some mention of Dr. Charles Williams' part in the luncheon program. He spoke on Research and its part in Dentistry of the future. Dr. Williams was brief in his remarks but brilliant in his presentation as he appealed to his dental audience for an "enlightened self-interest in research." In medicine there is one research worker for every 12 medical practitioners; in dentistry there is one for every 150 dentists.

Dental treatment services in Ontario are inadequate and he quoted the recent Ontario Government survey as his authority. The immediate need is for more dentists and more dental personnel. Present preventive methods are not so efficient; what we need are better methods and these must come from research. For many years research in our school has been done by just one man—Dr. Harold Box. Today we have brand new facilities and you are invited to come and see them. We have a new department of research in our faculty with a full-time director and a number of associates. In view of a campaign for funds to support this revitalized research program it is important that every dentist familiarize himself with its possibilities and so lend his support.

The day concluded with an evening of table clinics and demonstrations by pro-

fessional members, nurses and assistants as well as the dental trades.

It was a grand day.

T.R.M.

The London and District Dental Society opened its 1952-53 activities with a dinner meeting held in Hotel London, November 22, 1952. Dr. H. J. Dickson of St. Thomas turned the President's gavel of office over to Dr. J. B. Taylor who introduced the balance of the new Executive—Dr. D. E. Cousins, Vice-President; Dr. J. A. Guest, Secretary; Dr. R. J. Sutherland, Treasurer. Newcomers to the district were introduced and special acknowledgement was made of the election of one of the Society members, Dr. R. G. Woods of Watford, to the post of President of the Ontario Dental Association.

Booklets on "Fluoridation in the prevention of dental caries," published by the American Dental Association, were distributed to each member.

Guest clinician for the opening meeting was Dr. Louis C. Schultz, Professor of Operative Dentistry, University of Michigan. Dr. Schultz presented a paper on "The Preparation of the Patient and Dentist for Operative Dentistry," in which he stressed the need for a knowledge of psychology and philosophy to maintain happy relationships between patient and dentist. He urged the dentist to avoid becoming so engrossed in his practice that he tends to neglect his own family and his own personal health and well-being. Sufficient time for rest and relaxation is essential if the dentist is to maintain a high standard of work in the dental profession. Dr. Schultz's sincere manner left no doubt in the mind of the listener as to the wisdom and practicality of his remarks.

On the Tuesday following the meeting, the London Amalgam Study Group presented a clinic at the Detroit Dental Society Annual Review. Members of the clinic included Dr. W. H. Mason, Chairman, Dr. J. B. Taylor, Dr. J. A. Guest, Dr. J. A. Reid, Dr. A. M. Coote.

J. A. Guest

The Toronto Ladies' Dental Auxiliary met Thursday November 20 at Clarendon Hall, 54 Clarendon Avenue.

Mrs. J. E. Verth, President, presided at the luncheon.

Guest speakers were Mrs. Harrison Mullett and Dr. Henrietta Banting. Mrs. Mullett gave a most interesting talk on her experiences, "Living under Communists." Dr. Banting spoke on behalf of the Women's College Hospital.

Nell Downton—Publicity Convener.



The Late Dr. Cowling

At the Home-Coming Weekend of the University of Toronto, on Sunday, October 19, 1952, a short but significant ceremony took place when a portrait in oils of Thomas Cowling, D.D.S., M.A., B.Paed., was presented to the Faculty of Dentistry by Dr. and Mrs. Walter Bonney. Unfortunately, Dr. Bonney's health would not permit him to make the presentation in person so his remarks were read for him by Mr. C. C. Rous, the Secretary of the Faculty. Dean Roy G. Ellis very briefly expressed the appreciation of the Faculty for the portrait commemorating the long years of faithful service given by Dr. Cowling to the Faculty, and President Sidney Smith then accepted the portrait on behalf of the University and spoke in glowing terms of the contribution which Dr. Cowling had made to the University and to his profession.

Dr. Bonney's remarks in making the presentation were as follows:

Mr. Dean, Members of the Faculty, Ladies and Gentlemen:

I come before you today happy and proud to be the brother-in-law of the late Dr. Thomas Cowling. The closeness of this relationship, together with the fact that we were both members of the dental profession, gave me an opportunity to know the man intimately. I wish to draw your attention to some of the sterling qualities of his character.

Tom was an apostle of hard work. His father died when he was a mere boy, and he had to contribute his share to the family budget. Everything he obtained came the hard way. He worked at various side-lines while progressing towards the degree of D.D.S. He obtained his B.A. and M.A. from McMaster University extramurally, and his B.Paed. from the University of Toronto while working at night at his dental practice. I mention this, not because I believe a man will be remembered by the number of capital letters following his name, but to stress his attitude towards hard work. The mental effort in any of these courses was heavy enough in itself, and it took real courage to undertake that and simultaneously earn the money involved. Tom was not afraid of hard work.

Then he was a self-reliant man and prided himself on his independence. His watchword for advancement was merit. He sought no help from any man in his climb up the ladder of success. Promotion through influential friends was anathema to Tom, and he tried to instill this principle into the minds of his students.

Tom was also a thrifty man. Having found out so early in life the value of money, when it began to come his way he handled it wisely, and practised that old-fashioned virtue of thrift. Yet when faced with an example of real need and distress he would be very generous indeed. After his death, the number of verbal and written tributes from students he had helped financially was doubly comforting to his family, for he had never told us anything about it.

Tom had a high sense of moral values. He had been brought up in the strict and rather austere atmosphere of a Methodist home. Some of the restraints of that time stayed with him throughout life. He used neither liquor nor tobacco. Yet this was a personal matter with Tom, and it never reflected itself in a sweeping intolerance of his fellow-man. He abhorred evasion and trickery, and loved the honourable student who practised neither. He loathed blasphemous language, never indulged in it himself, and, indeed, rarely used slang. And this thought leads to the esteem in which Tom held the English language, an esteem amounting almost to an obsession.

His writings show how carefully he tried to avoid marring its beauty by the use of incorrect grammatical structure or by faulty spelling. In both the written and the spoken word he was a lingual purist.

In his later years his life seemed to focus more and more around his work at the school with the students. He made no apologies for being a dentist. Tom was proud of his profession, proud of his position on the staff, and proud of his membership in the Senate of the University of Toronto.

These, then, are some of the brighter facets cut in the stone of Dr. Cowling's character. He was a hard worker, self-reliant and independent, thrifty, kind to those in need, proud of his mother tongue, and prouder still of his chosen profession and the University of Toronto. Yet all these qualities would have availed him nothing if he had not possessed real native ability. This he had in no small measure.

Tom had his faults and who among us has not? But he was humbly aware of them and honestly strove to correct them. In spite of knowing him so well, there were certain doors in his personality that were never opened to any of us. But he will always be remembered by his family with affection, and by his community and his associate workers with respect. This, after all, is the proof of a full and useful life.

And now I have the honour to pay more than a verbal tribute to a fine man. Mr. Dean, my wife and I take both pride and pleasure in presenting to the Faculty of Dentistry this portrait of Dr. Cowling. We feel sure that when the graduates look upon it, many poignant memories will be awakened as they recall the contacts they had with him during their student years. We further believe that when the staff of the Faculty and the Board of Directors look upon the features of Dr. Cowling they will be stimulated in their efforts to further the interests of both the University and the profession, especially when they remember that this too was his one great passion.

The Toronto Study Club of Dental Technicians held its regular meeting on November 12, at the King Edward Hotel.

Mr. E. T. Wetterstrom of the J. F. Jelenko Company of New York City was the clinician of the evening. He gave a practical demonstration of investing and burnout of inlays and castings, temperature control of water for investment, and pouring and investing of full dentures by the vacutrol technique.

A discussion period was held afterwards, at which time Mr. Wetterstrom answered all questions put to him by the

members pertaining to every-day problems on the above techniques.

At the close of the meeting, Mr. Charles Spence thanked the clinician for a very educational and interesting evening.
Lloyd A. Raven

QUEBEC

Something new in the way of program material highlighted the first meeting of the winter season of **The Montreal Dental Club** held November 24. Under the chairmanship of Dr. W. C. Bushell, several of the members gave brief outlines of the subjects presented at the Annual Fall Clinic. Following each résumé, a panel of experts answered any questions on that particular topic.

Dr. Bushell felt that the evening would benefit those who were unable to attend some of the clinics and also refresh the subject matter in the minds of those who had heard the clinicians. It also provided some very lively discussion from the floor. Among those who reported their findings with the new techniques was one member who found that the fastest way to remove a rubber dam was to catch it with a burnisher at 10,000 revolutions per minute.

Drs. H. L. Mussells, S. A. McSween, L. A. Gill, R. S. Edmison, J. A. MacDonald, D. B. Ward, and W. H. Boyles presented the reviews of the clinics. Drs. W. C. Bushell, D. C. Gordon, W. J. John-

ston, I. K. Lowry, A. G. Racey, and W. F. Walford answered questions from the floor.

During the evening Drs. Roberta Dundass and Victor Potter were welcomed into the Club. President N. L. Martin announced that the next meeting would take the form of an oyster party to be held at the Medical Dental Corps Armoury on Dec. 15. G. D. Armstrong

Apical Curettage was the subject of the paper presented by Dr. Jacques Belanger to the members of the **Montreal Endodontia Society** at the December 1st meeting held in Université de Montréal.

Mr. Belanger stated that the problem we are confronted with today "is the one which concerns the elimination of periapical infection." This problem includes (1) the acute apical periodontitis; (2) the chronic alveolar abscess; (3) the sub-acute abscess; (4) the granuloma; and (5) the cyst. All these conditions are preceded by various pulpal reactions which the essayist briefly reviewed.

Dr. Belanger then discussed in detail the mechanics of inflammation and its role in the face of periapical injury. He described the role of the various cells and the tissue fluids in response to irritation; the limitation of the inflamed area by fibrous activity, the destruction and the removal of the irritation which was then followed by repair. In the case of acute pericementitis and the acute al-



Doctor Robert Vivian Bradlaw, Director of the Newcastle-Upon-Tyne Dental Hospital, receiving from Mgr. Olivier Maurault, Rector of the University of Montreal, a degree "honoris causa" in Dental Surgery. Doctor Bradlaw is also Dean of the Sutherland Dental School of the University of Durham and founder of the Association of Dental Hospitals of Great Britain and Northern Ireland.

veolar abscess, however, due to the violence of the irritant and the limited space in the periodontal membrane, strangulation of the blood vessels occurs which results in the interference of the normal inflammatory mechanism; necrosis follows with pus formation and drainage must be provided. Herein arises the main problem in that for repair to take place, the necrosed tissue must first be removed else the condition will become chronic resulting in a chronic abscess, granuloma or cyst as the case may be.

Three methods of treatment are available and the clinician discussed the value and theories of each as proposed by the various schools of thought. The first school states that following the usually accepted procedures with the canal being hermetically sealed, the inflammatory exudate will eliminate the lesion. The second school follows the technique of the first but concludes with the surgical elimination of the apically involved area and the cutting off of the root end. The third school follows the technique of the second but relies on curettage of the necrosed surfaces of the root apex so as to preserve as much of the tooth root as possible.

Dr. Belanger described the last technique in detail; the canal is opened and cleansed in the usual manner and sealed for forty-eight hours; at this time, with a semi-lunar incision and the use of bone chisels, etc., the apical area is reached, enlarged and the area enucleated. A swab is put in place and the canal then entered, filed, sterilized, completely dried and filled. The apical area is then re-entered, the excess filling material removed and the root end curetted; blood is allowed to fill the space and the area is closed. Some men, stated the essayist, touch the apex of the root with silver nitrate, but although this will undoubtedly seal the exposed dentinal tubules, it will probably also make it impossible for cementum to cover this area.

Following the presentation of his paper, Dr. Belanger reviewed several case histories; many members then joined in the discussion period which followed. Dr. Walter Phelps thanked the speaker. The president, Dr. J. P. Lantier was in the chair.

R.F.H.

The Fall Meeting of the Northeastern Society of Orthodontists—1952—For the first time in the history of the Northeastern Society of Orthodontists, a Fall meeting has been held outside of the United States. On November 10 and 11 Montreal orthodontists had the rare privilege of playing host to their colleagues from the South. In all, about 200 orthodontists attended the meeting which really started on November 9 with a pre-

liminary cocktail party. Here, old friends met and new friendships were formed and by Monday morning all had settled down to the purpose of the meeting.

The first paper — "Psychosomatics in Patient Management"—by Dr. I. W. January, of Santa Monica, California, was read, in the absence of the author, by Dr. R. Webster. Dr. January reasserted that psychology is a complement to orthodontic treatment and though we may know a little of the physical growth of the child, we are frequently negligent of psychological growth. Several useful hints to the practising orthodontist were suggested—perhaps the best were the value of being an extrovert and the need for observing the attitude of the whole family toward orthodontics.

Elaborating on previous papers on the role of habits on the production of malocclusion, Dr. C. L. Whitman, of Haken-sack, presented the second paper,—"Simplifying Our Orthodontic Problems." This very good paper was supported by two fine clinical movies showing the action of the habit, the resultant malocclusion and the occlusion after the elimination of the habit. The effects of tongue thrusting in swallowing, lip biting, thumb and finger sucking on the denture were shown. By the use of sound psychological principles, Dr. Whitman showed how the conscientious orthodontist could correct these habits in a short period. The value of musical instruments, especially the oboe, in the development of the labial musculature was illustrated by a movie.

Then followed a case report—"Orthodontic Treatment in an Unsuspected Hypothyroid Adolescent," by Dr. R. Pasternack of New York City. The value of integrating the various diagnostic aids available in a hospital were well brought out in this case. The treatment, both systemic and local, led to a very acceptable result.

The problem of "Paralleling Roots in Space Closure of Extraction Cases" was presented by Dr. B. F. Swain, of Morristown, N.J. This often-met problem was well illustrated by a series of x-ray slides which showed the effects of tooth movement adjacent to the site of extraction. Dr. Swain presented the end results of a method of treatment in which the roots were paralleled, but he suggested that normal tooth anatomy may lead to a degree of root divergence.

After luncheon the meeting reconvened to hear Dr. W. R. Bedell, of Poughkeepsie, N.Y., present—"The Use of Tissue Bearing Anchorage in Conjunction With Various Techniques in Treatment." Although resembling the European philosophy of orthodontics, Dr.

Bedell's beautifully illustrated paper showed how anchorage could be established in either arch by the use of tissue bearing removable appliances. The potentialities for this type of appliance in early orthodontic treatment were well presented.

The last paper on the first day—"The Denture and the Temporomandibular Joint in Function" was presented by Dr. R. M. Ricketts, of Los Angeles. Dr. Ricketts presented his findings on the normal temporomandibular joint by the use of x-ray laminography. The changes of rest position in the joint of various types of malocclusion suggested to Dr. Ricketts that in Class II malocclusions, the rest position may be a position of convenience, dictated by functions of speech, incision and respiration.

The remainder of the day was taken up by clinics which had a wide range of interest and a few elaborated papers which had been read.

The following morning, Tuesday, a symposium on "Orthodontics and Periodontics" was presented by the Faculty of Tufts College Dental School. Dean Cyril D. Marshal-Day opened the symposium with a paper entitled—"Prevention of Periodontal Diseases" and commented on the scarcity of available literature on periodontics and orthodontics. On examining the findings from epidemiological studies of periodontal disease in various racial groups, Dean Marshal-Day remarked on the increasing incidence of periodontal disturbance with age and that disturbances of the gingivae are present in the child. The relative part played by systemic and local factors in periodontal disease was stressed.

Dr. I. Glickman followed with a paper on "Histopathological Analysis of the Periodontium in Function." In a very dynamic presentation, Dr. Glickman discussed the lability of bone in the triad, tooth, periodontium and bone. Traumatic force was described as "any force which produces tissue injury," while the tolerability of a force was limited by the ability of the tissues to repair, over and above the normal reparative processes.

"Orthodontics as Related to Periodontics" was the next paper by Dr. H. I. Margolis. This paper reviewed the literature on tooth movement, the recent investigations of overbite and the different philosophies on the time to initiate orthodontic treatment. Dr. Margolis reaffirmed that a period of retention is necessary after treatment and that occlusal equilibrium should be performed a short while after completing treatment.

The final paper in the symposium was—"A Systemic Approach to Occlusal Equilibration"—by Dr. E. T. Fischer. Dr. Fischer presented a logical sequence of

occlusal grinding with the emphasis that centric functional points should be left undisturbed. It was unfortunate that time was rather short for Dr. Fischer's presentation but his table clinic in the afternoon was a big compensation.

After luncheon, Dr. R. M. Ricketts spoke on the "Growth of the Mandible and Orthodontic Treatment," a continuation of his previous paper, showing the changes in the temporomandibular joint during treatment and the relative role of the growth of the mandible in the production of the facial profile.

The last, but not the least, of a series of well presented papers was—"Radiation Hazards in Dental Radiography"—by Dr. E. Dale Trout, of Milwaukee, Wis. Dr. Trout, in a very impressive demonstration, warned of the increasing tendency for the human race to be exposed to radiation and urged that dentists be cautious in their use of x-rays. To reduce the hazards of radiation, Dr. Trout suggested a higher degree of x-ray penetration be used but explained that distance, the use of long cones and keeping the operator's fingers out of the mouth were most effective.

As in the first day, a diverse selection of table clinics was presented and was well attended.

Those privileged to attend this meeting no doubt extend warm thanks to the lecturers and clinicians; but, as in the case of all smoothly organized and efficient meetings, there are the "Back-room Boys." To Dr. Gerald Franklin and members of the Montreal Society of Orthodontics, must go a respectful and hearty thanks for a splendid meeting.

Dr. A. H. Craven,
Faculty of Dentistry,
McGill University

The Mount Royal Dental Society met in an all-day session on Nov. 28. The clinician of the day was David Weisberger, D.M.D., M.D., Chief of the Dental Department of the Massachusetts General Hospital, and Associate Professor of Dental Medicine at Harvard University. Dr. Weisberger spoke on "Oral Diag in the Hard and Soft Tissues."

Dr. Weisberger has long been associated with cancer hospitals and endeavoured to give his audience the benefit of this long experience. He stressed the taking of the history as the most important phase of the examination, and warned that we must take our time before making a diagnosis. Above all we must have a critical attitude in evaluating changes in the mouth. Such evaluation often demands a lot of time and keen search before leading to a proper diagnosis.

Dr. Weisberger pointed out that the

oral cavity is subject to every disease of the body, either as primary or secondary conditions. He classified diseases of the mouth as falling under the following types of tissue-responses:—hypertrophy, hyperplasia and hyperkeratinization. He devoted the morning session to Hyperkeratinizing Lesions.

Most white lesions in the mouth fall under this classification, and need not be leucoplakia. Hyperkeratinization is not the important thing, but it is rather the aetiology which determines whether the lesion turns malignant or not. Among the causative factors named were smoking, malposed teeth, infection, deficiencies and glandular disturbances. Dr. Weisberger showed many slides illustrating these conditions, arising independently and/or in conjunction with other diseases. He stressed again and again the association of these lesions with systemic disease, and pointed out that often the oral lesion receives the attention while some more subtle systemic disease proves more lethal to the patient.

Dr. Weisberger then went on to deal

with salivary gland disorders. He pointed out that biopsy and liberal x-ray examination with the injection of lipiadol are essential here. Dr. Weisberger's slides of the x-rays of these conditions served well to show the difficulty of their proper interpretation.

Dr. R. M. Weiner thanked Dr. Weisberger on behalf of the society for his interesting and illuminating presentation. The meeting then adjourned.

A. W. B.

■
The Child Health Association of Montreal has been awarded a federal grant to help it expand its dental health service for pre-school children.

This is an experimental project to demonstrate to the community the value of dental care for pre-school children and it also supports the dental health work of the health departments of Montreal and Verdun among children of school age.

The federal grant of \$1,100 meets the cost of an x-ray machine needed for the dental clinic.

BRITISH COMMONWEALTH NEWS

GREAT BRITAIN

Number of Dentists:—In a written reply on October 16, the Minister of Health stated that on the estimates made by the Teviot Committee, the shortage of dentists at the present time might be in the order of 9,000.—Br. D. Jour.

•
Course for Chairside Assistants:—The County of Lanark Education Committee have for some time provided a five-year course on one day per week for dental technicians. This is planned with a view to preparing apprentices and technicians to take the examinations leading to the full technological certificate of the City and Guilds Institute of London. The Council have now instituted a two-years' course for dental chairside assistants. The course has been planned by a committee on which the West of Scotland Branch of the B.D.A. is represented with the intention of enabling the trainees to obtain the certificate of the Dental Nurses' Society and the St. Andrews' Association qualification in first aid. Like

the technicians' course, the new course is designed for persons who are in employment and is, therefore, limited to one evening per week although optional afternoon classes in English and Current Affairs and Science are also available in connection with the course. The syllabus of lectures, most of which are to be given by members of the staff of the Glasgow Dental Hospital, covers the whole range of a chairside assistant's work. This new development will be watched with interest by all those who appreciate the need for the systematic training for chairside assistants.

—Br. D. Jour.

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Acrylic Filling Materials:—At the request of the Association, the Ministry have agreed to the use of acrylic filling materials in the general dental services. Regulations will be introduced shortly for this purpose. The fee to be paid will be the same as for silicate cements, pending further investigation.—Br. D. Jour.

Perfect valour is to do, without a witness, all that we could do before the whole world.—La Rochefaucauld.

Believe that life is worth living, and your belief will help create the fact.—William James.

GENERAL NEWS



Your Child and Mine

The above is the cover page of a new book on Dental Health published by the Dental Public Health Committee of the Ontario Dental Association. It is the result of two years' effort on the part of the committee in conjunction with the Canadian Dental Association.

This book is a must in every reception room. It is most attractive, readable and of inestimable value to parents and teachers.

Both the Ontario and the Canadian Dental Association Dental Public Health

Committees are anxious to promote the sale of this book to Boards of Education across Canada as well as to the private dentist. It is obtainable from the offices of the Ontario Dental Association or the Canadian Dental Association at 234 St. George Street in Toronto. The book is distributed at the nominal fee of \$1.00 which is less than the cost of production. The remainder of the cost is absorbed by the Ontario Committee as their further contribution to the promotion of Dental Public Health.

One must not expect magic from governments — that they should distribute more than they receive . . . in paying the high cost of social measures, Canadians know that social security for the people comes from the people. —Hon. Paul Martin.

IN MEMORIAM

Samuel Huntington Simpson of Kingston, Ontario, died on November 19 at the age of 85. Dr. Simpson was graduated from the College of Dentistry of the Royal College of Dental Surgeons of Ontario in 1902. He practised in Kingston until 1948 when he retired. He was president of Kingston Dental Association in 1943 and was associated with the dental service at the Ontario hospital at Portsmouth.

Dr. Simpson was a life member of St. John's Lodge A.F. and A.M., a member of Cataragui Lodge of Odd Fellows, Cataragui Golf and Country Club and Frontenac Club.

His military services included P.W.O.R. Kingston 1906 - 15 Lieut. and Capt.; C.A.D.C. 1915 - 20 Capt. and Major.

He was a member of the United Church.

He is survived by his widow, one daughter and two sons.

George Harvey MacDonald of Neepawa, Manitoba, died suddenly December 7. He was graduated from the Baltimore College of Dental Surgery in 1908 and had practised in Neepawa since then.

He was a member of the Neepawa Town Council from 1935 to 1943. He was a member of the Board of Stewards of the United Church and a member of the Masonic Order. He was also a past chancellor of Neepawa Lodge, Knights of Pythias and past deputy grand chancellor of the Grand Lodge of Manitoba.

Dr. MacDonald is survived by his widow, one daughter, one son, two sisters and a brother.

Thomas George Thompson of North Vancouver, B.C., aged 82, died November 5. He was graduated from the College of Dentistry of the Royal College of Dental Surgeons of Ontario and practised in Toronto and Lucan, Ont., before moving to B.C. 39 years ago.

He was a charter member of the Native Sons of Canada; a former elder of St. Andrew's Presbyterian Church; past master of Irving Lodge No. 120 A.F. and A.M., affiliated with the Burrard Masonic Lodge, North Vancouver; a charter member of North Vancouver BPOE No. 43 and a charter member of the Kiwanis Club of North Vancouver.

Dr. Thompson is survived by his widow, a daughter, a brother and a sister.

Walter H. Ross of Regina, Saskatchewan, died October 28 after an illness of about eight months. He registered in Saskatchewan in 1912 after graduation from the Philadelphia Dental College and has practised in Regina since then.

He was an elder in the First Presbyterian Church and a member of the Masonic Order.

Dr. Ross is survived by his widow and two daughters.

Herbert Russell Stewart of Bradford, Ontario, died on November 28 at the age of 63. He was graduated from the College of Dentistry of the Royal College of Dental Surgeons in 1918.

Dr. Stewart practised in Toronto from 1918 to 1923 when he moved to Bradford.

He is survived by his widow.

DIRECTORY

Canadian Dental Association Headquarters—234 St. George Street, Toronto, Ontario.

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Le Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

VOLUME

JANVIER, 1953

No 1

Les hyperplasies inflammatoires*

par JEAN FONTAINE, B.A., D.D.S., Montréal

Tous les tissus de la cavité buccale sont sujets à des modifications de leur structure histologique sous l'impulsion de facteurs divers. Ces changements cellulaires prennent les formes les plus variées: simples états inflammatoires jusqu'aux néoplasmes les plus malins. Le dentiste qui, le premier, constate l'existence de ces lésions n'est pas toujours en mesure de faire un diagnostic précis en vue d'une thérapeutique appropriée. Certaines hyperplasies inflammatoires les plus bénignes ont souvent une tendance persistante à la récurrence. Ces cas exigent une étude fouillée des facteurs buccaux responsables de la tumeur: un examen général par le médecin s'impose. Par contre, le patient doit porter une attention toute particulière à l'hygiène de sa bouche.

Cette étude a pour but d'attirer l'attention du praticien sur l'apparence clinique et histologique de certaines tumeurs bénignes rencontrées fréquemment en pratique courante. Si, au cours de l'examen sommaire, le dentiste classe cette lésion comme banale, en prescrivant le traitement requis, il contribuera au bien-être de son patient.

La tumeur spécifique la plus fréquemment rencontrée dans la cavité buccale est sans contredit le granulome ou l'hyperplasie inflammatoire, qui n'est pas un

néoplasme proprement dit. Cette masse inflammatoire, résultant d'une irritation chronique quelconque, par son apparence clinique, est souvent méprise pour un néoplasme. Nous devons cependant dire ici que de petites tumeurs malignes traumatisées ou infectées par des micro-organismes buccaux peuvent facilement simuler, à leur tour, des hyperplasies inflammatoires. Il est donc très important de faire une étude histologique de chaque spécimen chirurgical.

Dans certains cas, une hyperplasie de longue durée peut perdre son caractère inflammatoire et l'examen pathologique révélera alors une prolifération de fibres collagènes et ne sera pas facilement différenciée d'un fibrome.

Afin de clarifier toutes les données de ce problème, nous en étudierons cinq aspects principaux à savoir:

- 1) Étiologie
- 2) Nomenclature
- 3) Histo-pathologie
- 4) Traitement
- 5) Pronostic

I Étiologie:

Nous pouvons grouper tous les facteurs étiologiques des hyperplasies in-

*Travail préparé dans le service de Diagnostic de la Faculté de chirurgie dentaire de l'Université de Montréal.

flammatoires sous le titre *d'irritation chronique*, ce qui comprend:

a) Les calculs subgingivaux: la nourriture séjournant entre les dents: les obturations et les couronnes défectueuses exerçant leur irritation sur les tissus gingivaux, surtout interproximaux.

b) Les pièces de prothèse mal ajustées peuvent causer une irritation des tissus au repli muco-buccal.

c) Les chambres de succion de prothèses complètes ou partielles peuvent causer une irritation à la voûte palatine.

d) Les esquilles osseuses dans l'alvéole d'une dent fraîchement extraite.

e) Une infection chronique dans la pulpe ou dans le canal.

II Nomenclature:

On trouve dans la littérature dentaire une grande variété de noms pour désigner ces hyperplasies; la plupart de ces appellations sont employées pour décrire leurs apparences cliniques, leur site d'origine ou leur facteur étiologique spécifique, tel l'épulis granulomateux, la pulpe polypoïde, l'hyperplasie aréolaire, les pseudo-papillomes, les granulomes gingivaux, les pulpomes, etc.

On doit se rappeler qu'étiologiquement et histologiquement ces tumeurs sont toutes semblables ou identiques. Nous subdiviserons donc toutes ces hyperplasies inflammatoires selon leur site d'origine ou selon la région intéressée, parce que leur étiologie spécifique est plus apparente.

1° Les hyperplasies pulpaire (la pulpe polypoïde):

Nous les rencontrons particulièrement sur les dents cariées des jeunes individus là où il y a une infection légère de la pulpe. L'infection chronique agit comme irritant du tissu pulpaire causant une hyperplasie et une excroissance de couleur rouge vif dans une cavité proximale de la dent. Ces masses de tissu de granulation deviennent couvertes d'épithélium composé de cellules épithéliales desquamées provenant de la muqueuse environnante et des gencives.

2° Les hyperplasies alvéolaires (le granulome gingival):

Comme le nom l'indique, ces hyperplasies

sont des excroissances de tissu inflammatoire provenant de la gencive alvéolaire. Ce sont des petites masses sphériques couvertes d'épithélium qui peuvent atteindre la grosseur d'un pois. (fig. 1) Elles se forment ordinairement dans les espaces interdentaires et peuvent même remplir l'espace créé par une dent cariée. Elles sont souvent pédiculées, molles et de couleur rouge due à une grande vascularité. Si elles sont traumatisées, elles peuvent saigner abondamment à la moindre provocation. Une irritation mécanique ou traumatique cause toujours le granulome gingival.



FIG. 1

Granulome gingival—Patient édenté—irritation chronique causée par pièce de prothèse mal ajustée.

3° Les hyperplasies aréolaires (tissu redondant):

Chez les édentés, nous rencontrons souvent des enflures de la gencive aréolaire aux replis muco-buccaux où les bords trop étendus des dentiers mal ajustés sont les causes communes d'irritation. Ces excroissances de tissu mou de couleur rouge foncé se retrouvent aussi bien au maxillaire supérieur qu'au maxillaire inférieur et peuvent même couvrir toute la périphérie des dentiers. Ces hyperplasies peuvent se présenter sous forme de fissures multiples (fig. 2) et peuvent même être ulcérées. Leur traumatisme chronique n'engendre pas d'hémorragie.

4° Les hyperplasies palatines (pseudo-papillomes):

Les chambres à succion mises dans les dentiers pour aider à leur rétention, forment ordinairement au centre du palais dur

une hyperplasie de tissu rouge composée de plusieurs nodules enflammés. (fig. 3) Ces hyperplasies, mêmes si elles ne deviennent jamais malignes, récidivent toujours si leur excision est incomplète.

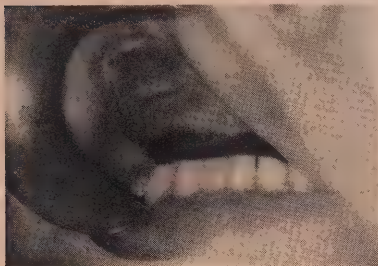


FIG. II

Hyperplasie aréolaire (tissu redondant) avec replis multiples — genre fissure causée par dentier mal ajusté.

5° Les épulis granulomateux:

Ces hyperplasies sont des manifestations inflammatoires de la gencive alvéolaire et sont formées par une prolifération de tissu de granulation. Ce tissu se forme le plus souvent dans l'alvéole à la suite d'une extraction. De couleur rouge ou jaune, il peut devenir pédiculé. (fig. 4) Lorsqu'on l'enlève, il y aura récurrence à moins d'éliminer la cause de l'irritation, qui est soit une esquille, soit une racine fracturée. Cette tumeur peut se rencontrer aussi sur une crête édentée surtout si le dentier s'appuie sur une aspérité osseuse ou sur une racine de dent; (fig. 5) il se développe alors une petite tumeur globulaire qui est ordinairement aplatie par la pression de la pièce de prothèse.

6° Les hyperplasies des muqueuses (granulome).

Ces excroissances de tissu mou de couleur rosée ont des formes différentes et se rencontrent sur les surfaces internes des joues et quelquefois sur la langue. Elles sont causées par ces habitudes ou ces tics qu'ont certains patients de se mordre les joues ou la langue; cette irritation peut aussi se produire au cours de la mastication ou d'une succion de la muqueuse que le pa-

tient exerce inconsciemment dans les espaces édentés.

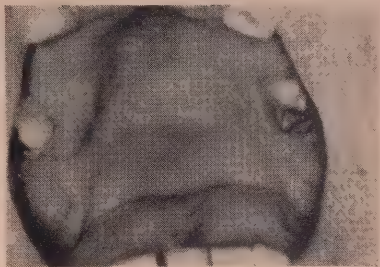


FIG. III

Hyperplasie palatine—inflammation causée par chambre à succion d'une pièce de prothèse partielle.

III Histo-pathologie:

Histologiquement, toutes les hyperplasies inflammatoires sont tout à fait semblables. Elles sont d'abord composées d'un tissu de granulation richement vascularisé. Cette vascularité est ordinairement capillaire sous forme de cellules endothéliales à couche simple. Il y a des cellules inflammatoires abondantes composées de lymphocytes, monocytes, polymorphonucléaires et des plasmacytes. Les fibroblastes sont présents mais ordinairement nous rencontrons une petite formation de fibres collagènes. Des cellules géantes peuvent apparaître spécialement si des corps étrangers, tels que des esquilles, racines etc., sont présents.

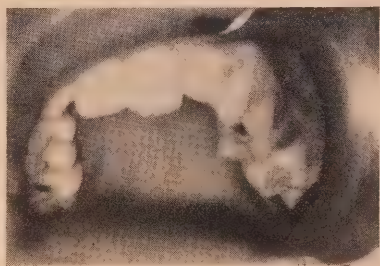


FIG. IV

Epulis granulomateux entre deux dents et attaché par un pédicule.

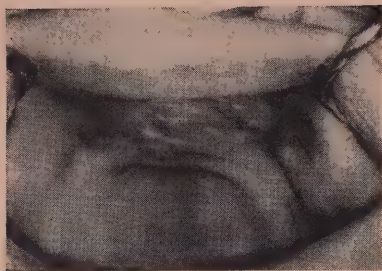


FIG. V

Epulis fissuré—dentier mal ajusté.

IV Traitement:

Le seul traitement de ces tumeurs consiste dans l'excision chirurgicale et l'élimination de l'irritation étiologique ou causale. Cette précaution est essentielle pour prévenir les récives.

V Pronostic: Toujours bon.

Quelquefois ces hyperplasies peuvent récidiver, si l'excision est incomplète ou si le facteur causal n'est pas éliminé. Ces

tumeurs sont bénignes et n'ont pas les caractères susceptibles de les rendre malignes.

VI Conclusions:

La découverte de ces hyperplasies inflammatoires aidera le dentiste dans son travail de tous les jours. Il est donc de première importance de savoir différencier les diverses lésions rencontrées dans la bouche.

Sommaire:

- 1- Toutes les hyperplasies inflammatoires apparaissent comme des tumeurs bénignes.
- 2- Aucune récive si le tissu de granulation est enlevé en entier par la chirurgie.
- 3- Leur apparence histologique est la même partout.
- 4- L'excision chirurgicale est l'unique traitement après avoir enlevé la cause: irritation chronique.
- 5- Pronostic: toujours bon.

2900 Boulevard du Mont-Royal

Comparaison des six causes principales de mortalité en 1900 et 1951

1900			1951		
Rang	Cause	Taux par 100,000	Rang	Cause	Taux par 100,000
1-	Tuberculose	195	1-	Maladies du coeur	240.7
2-	Pneumonie	176	3-	Lésions vasculaires du système nerveux central	64.5
3-	Diarrhée et entérite	140	4-	Accidents	38.4
4-	Maladies du coeur	137	5-	Pneumonie ou grippe	18.2
5-	Néphrite	89	6-	Tuberculose	17.6
6-	Accidents	88			



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INFECTION "FOCALE"

Dans la livraison d'octobre 1952 du Journal de l'Association Médicale Américaine, paraissait un éditorial traitant d'infection " focale." Cette question intéresse les dentistes puisqu'on attribue aux dents infectées le pouvoir de causer à distance des troubles organiques tels que rhumatisme, arthrite, etc.

Cette théorie n'est pas nouvelle; en 1912, Hunter dénonçait ici-même, à Montréal, le danger des infections dentaires et des restaurations malsaines dans une conférence historique qui souleva un retentissement considérable au sein de la profession médicale.

Plus tard, Rosenow, de la clinique Mayo, après avoir approfondi l'étude de la transmission des produits toxiques d'un foyer infectieux à d'autres parties de l'organisme, démontrait d'une façon évidente l'existence de ces relations pathologiques entre divers groupements cellulaires, sains et malades.

Cette théorie, qu'on n'a jamais réussi à prouver par des expériences de laboratoire, perdit peu à peu la faveur des professions sanitaires parce que les résultats cliniques venaient souvent en contradiction avec ses données. Des malades souffrant apparemment d'affections causées par des foyers infectieux, comme des abcès périapicaux, ont fait éliminer ces infections, sans être débarrassés de leurs troubles organiques.

D'autres patients présentaient des symptômes de maladies causées par des foyers infectieux, sans qu'on puisse déceler la présence de ces foyers nulle part.

En d'autres occasions, on rencontrait de ces personnes atteintes de foyers

infectieux, aigus ou chroniques, (granulomes apicaux, culs-de-sacs gingivaux) et pourtant bien portantes.

Ces constatations jetèrent en discrédit cette théorie d'infection " focale " et on se prit à regretter toutes ces mutilations (dents, amygdales, vésicules biliaires, appendices, etc.) qu'on avait fait subir à ces patients sans améliorer leur état.

Voici que cette hypothèse ressucite et qu'elle reçoit l'approbation officielle d'un organisme, tel que l'Association Médicale Américaine, après des travaux sérieux entrepris par des chercheurs différents.

Ce système est cependant envisagé sous un angle nouveau qui explique en partie ses échecs passés. Aujourd'hui, on est d'avis que ces foyers infectieux " in se " ne peuvent pas exercer d'influence pathologique sur des tissus éloignés d'eux; pour que leurs effets se traduisent à distance, il faut certaines conditions, qui favorisent leur dissémination. Ces circonstances prédisposantes ou favorisantes sont soit un traumatisme, soit une modification dans la circulation, soit des changements dans le phénomène d'immunité.

En un mot, la conception moderne d'infection " focale " renferme des notions nouvelles au sujet de facteurs, qui sont indispensables à la propagation de l'infection. Il ne suffit pas que de tels amas de cellules infectées existent pour que le thérapeute suppose que ces agglomérations de bactéries soient susceptibles de donner naissance à des troubles organiques. Il faut de plus, que certains facteurs favorisent cette dissémination.

Quelle doit être l'attitude du dentiste en face de foyers infectieux chroniques, qui n'occasionnent aucun malaise local au malade, ni aucune manifestation organique? A la lumière des observations compilées récemment par certains rapporteurs, le dentiste doit éliminer de la façon la plus conservatrice possible ces foyers infectieux en prévision de l'apparition de ces facteurs prédisposants à la transmission de l'infection; de plus, en prenant cette décision, le dentiste doit songer au fait qu'une fois que l'arthrite, par exemple, a commencé son ravage, la disparition des foyers responsables n'apaiserait pas l'acuité de la maladie.

GERARD DE MONTIGNY

Les mots mal faits

Dans le cas de "pyorrhée", ce n'est pas le mot qui est mal fait, c'est l'usage que l'on en fait qui est abusif. Tout le monde sait que pyorrhée veut dire écoulement de pus et que, par conséquent, l'expression employée à un moment donné de "pyorrhée" est un paradoxe.

Tout le monde? Il ne semble pas. Car nous avons lu dans un magazine un article de vulgarisation, dû fort probablement à la plume d'un confrère et qui parlait, non seulement de pyorrhée sèche, mais aussi, et l'on avouera que c'est un comble, de pyorrhée suppurée.

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Méthode de fraissage sans douleur: appareil Waropa

par WALTER ROOS, Basle, Suisse

Un beau jour d'été 1920, le soleil me réveillait déjà à 5 h. du matin. C'était un jour ensoleillé et gai.—Les hirondelles sifflaient, les oiseaux chantaient. On se sentait plein de force et de santé. Mais de savoir que dans deux heures et demie déjà je devrais commencer à fraiser les dents des clients, que je devrais tourmenter les pauvres gens ou alors faire des piqûres une après l'autre, me rendait mécontent.

N'y a-t-il pas un autre chemin pour soulager les douleurs pénétrantes du fraissage? C'était la question que je me suis posée. Je pensais aux nerfs sensibles du plexus Retterer (Raschkow), aux cellules odontoblastes, aux fibres de Tomes. Tout à coup, j'étais sûr que la cellule odontoblaste envoie un processus nommé fibre de Tomes dans le tube dentaire, que la douleur se provoque par la transmission d'un mouvement, par une ondulation à la cellule odontoblaste et, de là, aux nerfs sensibles du plexus Retterer. S'il est possible de supprimer ce mouvement, on doit pouvoir fraiser sans douleur. Je suis allé le demander aux professeurs Gysi et Ludwig. Ils ne savaient pas s'il y avait une communication entre la cellule et la fibre, car, à ce temps-là, on ne faisait pas encore les coupes comme aujourd'hui. Comme l'objet à couper n'était pas gelé, on trouvait toujours un espace vide entre la pulpe et la dentine, parce que les fibres, sortant des cellules, étaient toujours déchirées. Malgré l'impossibilité de voir sous le microscope cette communication, j'étais sûr qu'elle existait; mais comment le prouver?

J'ai fait des essais avec toutes sortes de médicaments. J'ai vu, que tous les anesthésiques mis dans une cavité, comme la cocaïne ou le novocaïne n'ont aucune influence sur la sensibilité de la dentine, mais, que si on transporte le même anesthésique avec le courant électrique (Cathorèse) on provoque une insensibilité

complète. Alors, il doit y avoir une communication entre la fibre et la pulpe.

Deuxièmement, j'ai mis du nitrate d'argent dans la cavité. L'albumine de la fibre forme avec le nitrate d'argent le nitrate d'albumine, qui, sous l'influence de la lumière, devient noir. J'ai vu que je pouvais fraiser sans faire mal jusqu'à la profondeur de la dentine noircie, ça veut dire, aussi loin que la fibre de Tomes était coagulée, donc plus ou moins dure.

Troisièmement, j'ai fraisé avec des fraises très chaudes (à 400° à la tige). Le fraissage était indolore parce que la tête de la fraise avait alors 100° ce qui faisait coaguler la fibre à la face de contact avec la fraise.—Pour faire le contraire, j'ai fait des essais avec des fraises gelées. J'ai fait l'observation que déjà à une température de 100° à 10° on pouvait atteindre souvent un fraissage presque indolore.

Je ne veux pas vous fatiguer en vous racontant tous les essais et toutes les constructions que j'ai faits; je veux dire seulement que tous ces procédés étaient longs et souvent pénibles. Mais pour finir, j'avais atteint ce que j'avais voulu, un fraissage qui permettait une très grande réduction ou même une élimination des douleurs sans perdre le contrôle sur la pulpe, une méthode qui n'est pas nuisible à la vitalité de la pulpe.

En 1928 enfin, on recevait les premières photos des coupes de séries qui montraient que mon idée était juste. La cellule odontoblaste et la fibre de Tomes forment donc un tout. Le turger de la cellule odontoblaste, par conséquent son état de nutrition et de santé, se reproduira donc forcément dans la fibre de Tomes. L'alimentation insuffisante et l'atrophie de la cellule odontoblaste correspondent à des états similaires de la fibre de Tomes. Aujourd'hui, on peut lire cela dans les travaux sur la nutrition de la substance dure de la dent, publiés par des indus-

tries chimiques (Sandoz, Hoffman La Roche, etc.) et surtout dans le dernier travail de notre professeur Dubois-Prévost "La Dent". Si cette opinion est juste, il faut que toute modification de forme de la fibre entraîne une modification de la forme de la cellule. Une modification spontanée de la cellule se transmettra (sous forme de mouvement) aux rameaux nerveux sensibles du Plexus de Retterer, provoquant par là une douleur (le sucre, le sel, la température, l'alcool concentré, la pression sur les tubes de la dentine, le tiraillement provoqué par des instruments qui glissent au lieu de couper). On voit, que c'est toujours un mouvement (contraction-dilatation ou traction-pression) qui provoque une douleur. Regardons quelques instants la structure de la dent.— Laissons de côté l'émail, qui est à peine sensible.

La dentine se compose de canalicules dentinaires remplis par les fibres de Tomes. L'hyperesthésie de la dentine est la conséquence de l'augmentation de la turgescence de la cellule odontoblaste et de son prolongement (la fibre), augmentation provoquée par une excitation. Celle-ci détermine, en outre, une augmentation de lipoïde et, dans certains cas, une formation de dentine nouvelle. Par conséquent, la lipoïde, considérée par Hartmann comme substance nerveuse, n'est en réalité pas autre chose qu'un produit de dégénérescence graisseuse, destinée à servir à la protection naturelle de la dent contre les substances nocives qui tendent à l'envahir. Les lipoides jouent donc dans la dentine un rôle qui est tout l'opposé de celui que Hartmann croit devoir leur attribuer.

La pulpe est constituée par du tissu conjonctif, richement pourvu de vaisseaux sanguins et de nerfs. A sa périphérie, nous trouvons un réseau extrêmement fin et touffu de cylindraxes, appelé plexus Retterer (Raschkow), dans lequel sont serrées les cellules odontoblastes. Quand on les examine au microscope, ces cellules, pourvues d'un noyau, paraissent être à première vue des éléments isolés. En y regardant de plus près, nous voyons que dans l'espace compris entre la pulpe et la dentine, une fibrille va de chaque

cellule odontoblaste à un canalicule dentinaire qu'elle parcourt comme fibre de Tomes, jusqu'à la limite émail-dentine. L'ensemble odontoblaste-fibre de Tomes constitue donc une cellule à noyau avec son prolongement. A l'intérieur de cet ensemble, nous avons le protoplasme qui est surtout composé d'albumine, comme substance protéique semi-liquide.

D'après Dieck, Tojoda et Münch, la fibre de Tomes est entourée, à l'intérieur du canalicule dentinaire, d'un réseau de fibrilles nerveuses. Je crois que ce réseau de fibrilles nerveuses était un produit artificiel de coloration, résultant du fait que la membrane détachée par rétrécissement du protoplasme, se colorerait en sa qualité de substance lipoïde-albuminoïde, de même façon que la substance lipoïde-albuminoïde des fibres nerveuses.

Le fraiseage, comment s'opère-t-il?

La fraise sectionne franchement la première paroi dure du canalicule dentinaire, comprime alors la masse solide du protoplasme de la fibre à l'intérieur et la presse contre la paroi dure opposée. Au moment où le canalicule est complètement sectionné, la fraise entraîne le protoplasme. Cette aspiration se répercute sur la cellule sous forme d'ondulation, qui se communique à son tour aux fibres nerveuses du plexus Retterer, provoquant par là une douleur. Si nous parvenons à empêcher cette ondulation, nous devons pouvoir fraiser sans douleur. Cette opinion n'avait jamais encore été émise avant 1920.

Examinons sous cet angle les différents systèmes préconisés pour le fraiseage indolore.

1. Les fraises et les instruments bien tranchants provoquent moins de douleur que ceux qui sont émoussés, parce qu'ils coupent mieux le protoplasme et l'entraînent moins que les seconds hors du canalicule dentinaire.

2. Dans une cavité asséchée par l'alcool, le chloroforme, etc., la fibre de protoplasme étant déshydratée sur plus ou moins de profondeur, se laisse moins facilement entraîner. En renouvelant la dessiccation, on arrive à réduire considérablement et presque à supprimer la douleur du fraiseage. R. F. King à déjà fait part de

ces observations en 1885 dans le "Journal of British Dental Association". A la vérité, cette dessiccation répétée est elle-même fort douloureuse.

3. Si nous recourons à ce que l'on désigne par *anesthésiques dentinaires*, nous pouvons constamment observer que la cocaïne, la morphine, la novocaïne pures sont absolument inefficaces. Ces anesthésiques, qui s'avèrent pourtant d'habitude d'une grande efficacité, n'agissent que combinés: 1) avec des alcools ou autres remèdes déshydratants; 2) avec des substances qui précipitent ou coagulent le protoplasme ou forment avec lui des composés stables. Exemples: la créosote, l'eugénol, le thymol, le formol, le phénol, les acides, les alcalis, le nitrate d'argent, l'arsenic, etc. . . . Pour tous les anesthésiques dentinaires additionnés de ces substances, on peut tranquillement se passer de l'anesthésique; l'efficacité sera la même. On peut placer sous ces deux rubriques tous les anesthésiques dentinaires. Je ne saurais m'étendre ici sur chaque médicament; cela nous entraînerait trop loin. On peut néanmoins s'assurer de l'exactitude de ces indications en mettant soi-même les différents anesthésiques dentinaires à l'épreuve par ce procédé. Il est certain, que, à part les remèdes déshydratants, tous ceux qui coagulent le protoplasme, ou se combinent chimiquement avec lui, constituent des poisons protoplasmiques. Tous provoquent des lésions plus ou moins étendues de la cellule odontoblaste, et, par là, une réaction pulpaire sous forme d'hyperémie évoluant souvent en nécrose. En avril 1920, *Herman Prinz*, de Philadelphie, publia dans le "Dental Cosmos" une "Contribution à la pathologie et au traitement de l'hyperesthésie de la dentine" (traduction en langue allemande du *Prof. Dr. W. Hess* dans la Revue mens. suisse d'odont. 1920, no 3), dans laquelle il conclut que la recherche d'un médicament pour insensibiliser la dentine par simple contact, comme dans le cas de l'anesthésie régionale, était une entreprise illusoire. Ce médicament devrait, selon lui, et il a raison, remplir les conditions suivantes:

1. il ne doit pas porter atteinte à la structure organique ou inorganique;

2. il ne doit pas nuire de façon permanente à la santé de la pulpe;

3. son action pharmacodynamique ne doit pas excéder quelques minutes;

4. son emploi ne doit pas nécessiter un matériel compliqué;

5. il doit pouvoir être employé pour les caries superficielles du collet;

6. son usage ne doit pas être douloureux, le remède ne devant pas être pire que le mal;

7. la coloration de la dent ne doit pas en être altérée.

Jusqu'à présent nous ne connaissons pas de médicaments qui remplissent ces conditions.

Abandonnant donc le domaine des anesthésiques dentinaires, nous nous tournerons vers l'appareil que je veux vous expliquer. Comment s'emploie l'appareil Waropa?

D'un récipient d'acide carbonique, semblable à ceux qu'on utilise pour le tirage de la bière, on extrait à l'aide d'une conduite en métal, de l'acide carbonique à l'état gazeux sous une pression de 54 à 62 kilos. Une pièce à main ou un contre-angle de construction très soigné s'adapte, au moyen d'un dispositif d'accouplement à la conduite de CO². Les pièces s'adaptent à tous les bras de tours. L'acide carbonique, très comprimé, amené à la tige de la fraise, est détendu dans une chambre d'expansion située dans la partie antérieure de la pièce autour de la tige de la fraise. Le gaz carbonique libéré est conduit à l'air libre par un tuyau d'échappement. On ouvre la soupape du récipient d'acide carbonique et la fraise en rotation se congèle en quelques secondes, elle est givrée et on peut fraiser. Il faut seulement veiller à ce qu'elle reste constamment réfrigérée. Pour cela, il faut remplir quelques conditions.

1. La pression doit montrer au manomètre entre 54 et 62 kilos.

2. Si la pression n'est pas suffisante, il faut chauffer avec le plat électrique, qui est attaché sous la bouteille de l'acide carbonique.

3. Il faut contrôler si nulle part le gaz ne peut s'échapper et produire de la neige dans la conduite qui obturerait le gicleur.

Ces contrôles seront faits facilement tous les matins par notre aide.

4. La cavité de la dent doit être sèche.

5. Il faut tourner lentement, avec peu de pression, mais constamment.

Pour la préparation de la cavité, le mieux est de procéder ainsi: avec un ciseau à émail, avec une pierre à diamants on fait l'extension et avec l'excavateur on nettoie la cavité jusqu'à l'apparition d'une sensibilité désagréable. On dessèche alors la cavité et on applique ensuite la fraise gelée encore immobile autant que possible de telle façon que le jet d'acide carbonique qui pourrait échapper au début le long de la tige de la fraise (surtout si elle est trop mince) aille se perdre hors de la cavité. On commence alors à fraiser avec la fraise congelée, en la faisant tourner lentement et en exerçant une légère pression. Il arrive que l'impression de froid cause, au début, une légère douleur au patient. La peur de la douleur que l'on s'attend à ressentir, joue aussi un grand rôle. Mais il ne faut pas se laisser intimider et retirer la fraise de la cavité ou commencer à tamponner, au contraire, il faut laisser la fraise dans la cavité, interrompre sa rotation, la reprendre, l'interrompre à nouveau, de façon que la dentine soit réfrigérée au point de contact avec la fraise congelée. En procédant ainsi, nous arriverons à préparer une cavité chez le patient le plus sensible, qu'il nous eût été impossible de traiter sans l'appareil "Waropa". Il y a des cas, et c'est même la majorité, où l'on peut fraiser constamment et tranquillement sans interruption. Les patients accusent seulement une petite douleur éloignée (ils disent souvent: "si l'on peut appeler cela une douleur") ou pas de douleur du tout. D'où proviennent ces différences?

De même que nous avons différentes vitesses de propagation de l'influx nerveux dans les différentes voies nerveuses (temps de réaction), nous avons aussi des limites différentes d'excitabilité thermique. Il y a des gens qui, en hiver, par une température de 0°, éprouvent une sensation douloureuse lorsque, en parlant, le vent vient frapper leurs dents saines. Les mêmes phénomènes désagréables s'observent chez d'autres personnes, quand la

température de leur thé dépasse 37°. Mais il y en a aussi qui n'éprouvent rien, ni par -20°, ni par +40°. Il en va de même pour la sensibilité au fraisage. En principe, la fraise ne saurait jamais être trop froide, car on peut compenser la température trop basse par une rotation plus rapide et l'adapter ainsi au patient. Ces petites observations montrent combien il est nécessaire que le dentiste soit sensible à la douleur du patient.

On m'objectera qu'il est dénué de sens de s'efforcer de construire une fraise soi-disant indolore, puisque l'insensibilité obtenue est seulement relative (environ 80%), alors que nous pouvons atteindre une insensibilité absolue grâce à l'anesthésie locale. Je répondrai qu'elle aussi présente des inconvénients. Si nous désirons, par exemple, obtenir une anesthésie totale de la canine supérieure, nous devons injecter au trou incisif, au trou sous-orbitaire et souvent encore au trou palatin postérieur. L'anesthésie du ganglion sphéno-palatin est sans doute peu usitée à cause du danger de fracture de la canule. Les piqûres dans la région des lèvres et au trou incisif sont assez douloureuses, en sorte que la muqueuse est préalablement anesthésiée par un badigeonnage de cocaïne ou de larocaïne. Après une attente de 5 minutes, on pratique la piqûre, après quoi, il faut attendre 15 à 20 minutes pour que l'anesthésie soit bonne. Pendant la moitié de ce temps, on aurait fini de préparer une cavité du collet à la canine avec l'appareil "Waropa"; on aurait de plus épargné au patient les piqûres, les douleurs qui suivent, le mal de tête qui résulte fréquemment des congestions provoquées, les nausées et le sentiment de fatigue. Un patient me déclara un jour: "Après chaque anesthésie régionale, j'étais incapable de faire mon travail l'après-midi. La dernière fois, après le traitement avec l'appareil "Waropa", je ne me sentis nullement incommodé et travaillai jusque tard dans la soirée; j'avais complètement oublié que j'avais été chez vous". Des syncopes ne se produisent jamais, ce qui est parfois le cas pour l'anesthésie locale.

L'emploi de l'appareil "Waropa" ne présente *aucun danger*, même dans les cas

d'artériosclérose avancée, d'angine de poitrine, d'anévrysmes, de vices cardiaques organiques, de Basedow, qui constituent des contre-indications pour l'anesthésie par injections, et pour l'analgésie par inhalation. En utilisant l'appareil "Waropa", les patients atteints de névroses cardiaques, d'asthme, de fièvre des foies, n'ont pas à redouter les états d'anxiété provoqués chez eux par l'application de l'anesthésie locale. Cela ne veut nullement dire que je rejette l'anesthésie régionale, ni que je veuille lui substituer l'appareil "Waropa". Je ne voudrais pas que mon exposé soit interprété dans ce sens. A côté de l'appareil "Waropa", j'utilise moi-même, mais moins souvent qu'autrefois, l'anesthésie régionale partout où l'on ne peut se défendre de la salive ou lorsque l'on est obligé de recourir à l'angle miniature. Mais je n'en sers plus pour les caries très sensibles du collet, pour ouvrir la pulpe avant de poser un pansement à l'arsenic ou au cobalt et, en général, pour toutes les dents du maxillaire supérieur ou inférieur, comprises entre la seconde prémolaire droite et la seconde prémolaire gauche. Je me sers très souvent de l'appareil "Waropa" pour faire des amputations vitales. L'avantage, en utilisant l'appareil "Waropa", d'entrevoir par transparence le rouge de la pulpe normalement irriguée de sang, par opposition à l'aspect de la pulpe anémiée par l'anesthésie, fera préférer ce procédé au fraisage qui semble plus lent, mais qui va plus vite, parce qu'on fraise continuellement. Mainte pulpe pourra être conservée ainsi, que nous aurions mortifiée sans hésiter en nous servant de l'anesthésie.

Conclusions:

Les procédés utilisés jusqu'ici pour réduire la douleur lors du fraisage des dents vivantes sont, ou bien peu efficaces, ou nocifs pour la pulpe ou d'un maniement trop compliqué. L'emploi de l'appareil "Waropa" permet, en l'utilisant correctement, de fraiser sans douleur ou presque. La méthode est simple et ne porte nullement atteinte à la dent. Elle demande seulement une bonne volonté d'apprendre une nouvelle méthode du fraisage et un

peu de sentiment pour le client. Pour finir demandons ce que l'appareil "Waropa" veut et ce qu'il ne veut pas.

Ce que "Waropa" ne veut pas.

1. Il ne veut pas être diffusé par la presse, le magazine ou autres publications.
2. Il ne veut pas être un appareil universel pour fraiser sans douleur, mais un auxiliaire précieux diminuant douleur et travail.
3. Il ne veut pas fraiser tout à fait sans douleur, pour pouvoir conserver le contrôle de la pulpe.
4. Il ne veut pas supplanter l'anesthésie tronculaire, là où elle est nécessaire.
5. Il ne veut pas diminuer la valeur de l'analgésie au protoxyde d'azote, ou autre narcose, dont la responsabilité ne saurait être prise qu'avec un médecin ou une infirmière spécialisée.

Que veut "Waropa"?

1. Il veut être introduit chez le dentiste par les instituts scientifiques des Universités et par la bibliographie odontologique.
2. Il veut faciliter au dentiste le contrôle de la pulpe, ne la rendant pas anémique, qui l'empêche de saigner, quand elle est traumatisée. Il n'arrive pas, dans l'emploi du "Waropa" qu'une pulpe nécrotique ne soit pas reconnue.
3. Pour conserver le contrôle de la pulpe, il ne veut pas fraiser de façon tout à fait indolore.
4. Il veut éviter la narcose qui ne saurait se passer d'assistant.
5. Il veut, là où cela n'en vaut pas la peine ni le temps d'attente, ou bien dans les cas d'hypertonie, tachycardie, angine de poitrine, asthme, etc., diminuer le travail du dentiste et, chez le patient, la douleur de 80% en supprimant tout danger.
6. Sans tourmenter le patient, "Waropa" veut fraiser des cavités (du collet) dentaires dans le domaine de 5 jusqu'à 5 qui peuvent à peine être touchées à la sonde.

Infection "focale"

La théorie d'infection "focale," après avoir exercé une influence profonde sur la pratique de la médecine durant toute une génération, subit un recul depuis une quinzaine d'années.

Les abus et l'exagération commis en son nom ont été responsables, en partie, de son discrédit; de plus, les facteurs énumérés ci-après ont amené les thérapeutes à se désintéresser de cette conception, qui avait foi et loi chez leurs devanciers. 1) Un grand nombre de malades souffrant d'affections apparemment causées par des foyers infectieux, ont continué de s'en plaindre, après l'élimination de ces supposés foyers. 2) Plusieurs patients atteints de ces mêmes maladies organiques n'avaient pas de ces foyers infectieux. 3) Des foyers infectieux se rencontrent aussi bien chez des gens sains que chez des gens malades; des statistiques en font foi.

Ces observations paraissent porter un coup de mort à cette théorie; mais des chercheurs, tels que Kolmer (1), Kern (2) et Irons (3), disent que ces remarques ne prouvent rien et qu'il se peut fort bien que certains foyers d'infection, aidés par des circonstances favorables, occasionnent des dérangements organiques. Un foyer infectieux peut se comparer à une allumette enflammée qui aurait été la cause initiale d'un feu de forêt. Il ne suffit pas d'éteindre l'allumette pour arrêter les flammes, qui font rage, ou pour restaurer les arbres consumés; de même, l'élimination des foyers infectieux n'empêche pas la maladie de suivre son cours et ne redonne pas aux tissus endommagés leur état original. On ne prouve pas par là qu'un foyer n'a pas été le point de départ d'une affection ou que l'annihilation précoce d'un foyer n'aurait pas prévenu le progrès de la maladie.

De même, l'abandon, in situ, d'un foyer unique qui jouerait un rôle dans l'éclosion

d'un trouble organique ne prouve pas que d'autres foyers ne sont pas responsables de son entretien. Ainsi, quand on ne peut en déceler chez des patients atteints d'une affection, qu'on croit généralement causée par un foyer infectieux, on ne peut tout de même pas affirmer que ces foyers n'existent pas: ils sont pour le moins introuvables. On ne peut dire, non plus, que de tels foyers ont pu présider au début de la maladie.

Ces allégations ne détruisent pas le fait qu'il peut exister un mécanisme semblable à celui qui se produit au cours de l'infection "focale"; comme il est admis qu'à l'occasion d'un traumatisme, d'une irritation chimique ou d'une modification dans la circulation, des bactéries qui séjournent habituellement à la surface des muqueuses de la bouche, du tract respiratoire, de l'appareil digestif et génito-urinaire, traversent ces barrières naturelles et causent une septicémie temporaire. Enfin, le fait que certaines personnes peuvent abriter des foyers infectieux, sans en souffrir d'effets pathologiques, ne prouve pas que ces foyers ne peuvent pas engendrer de tels troubles. On a seulement là une preuve de la passivité de ces foyers en l'absence de facteurs prédisposants, comme un traumatisme, des modifications circulatoires ou des changements dans le phénomène d'immunité. En face de cette discussion, on peut dire qu'en s'appuyant sur la logique seule, la théorie fondamentale subsiste. Au contraire, des faits viennent confirmer la théorie—modifiée, il est vrai—mais la théorie quand même de l'infection "focale." Il existe des foyers infectieux susceptibles de faire naître, à distance, des pathologies réelles. Kolmer (1) a compilé un tableau élaboré de ces foyers et des maladies qu'ils peuvent occasionner à distance. Un abcès cutané, par exemple, quand il est soumis à un traumatisme, peut susciter une septicémie se traduisant chez certains individus par une endocardite bactérienne aiguë, une ostéomyélite, une arthrite suppurante, un abcès

rénal et un grande variété de troubles organiques. Des foyers d'infection dentaire ont donné naissance à une septicémie momentanée à la suite de mastication ou de massages des gencives; des extractions de dents infectées par un streptocoque viridans ont occasionné des endocardites bactériennes sub-aiguës provoquées par le même microbe; des septicémies ont aussi été observées à la suite de massage de prostates infectées; et il faut admettre qu'une stimulation d'amygdales infectées ou de tout autre foyer compressible par les structures musculaires adjacentes peut produire les mêmes résultats. Des infections localisées, à base de bacilles diphtériques et tétaniques et de streptocoques hémolytiques produisent à distance des lésions telles que myocardites, rigidités musculaires ou des éruptions de scarlatine par les toxines sécrétées par ces micro-organismes. Des effets semblables, mais moins dramatiques, peuvent se rencontrer dans des infections "focales" ensemencées de bactéries qui libèrent des exotoxines. Une infection de la gorge causée par des streptocoques hémolytiques A beta peut être suivie, chez les patients sensibilisés, de fièvre rhumatismale aiguë. Ces réactions sont peut-être le résultat de la sensibilisation du tissu conjonctif des articulations et du cœur par les bactéries venant du foyer initial, ou encore par les produits de leur interractions avec les cellules de l'individu. L'incidence des fièvres rhumatismales a été réduite d'une façon évidente grâce à la prophylaxie des infections de l'arbre respiratoire à l'aide d'antibiotiques ou de sulfamidés. Ces observations et plusieurs autres ont porté Kolmer à conclure que le rôle étiologique des infections "focales" dans quelques maladies organiques n'est plus du domaine spéculatif, mais bien confirmé par les faits cliniques. D'autres observations semblent prouver cette opinion: on note une régression des symptômes chez certains patients quand les foyers infectieux sont éliminés.

Cependant, quoique des foyers infectieux jouent un rôle dans l'évolution de certaines maladies, il ne faut pas croire que tous les foyers infectieux occasion-

nent des troubles organiques ou que tous les désordres d'origine obscure sont causés par des foyers infectieux. Des maladies, comme l'arthrite rhumatismale, viennent-elles de foyers infectieux? On ne saurait le dire. On en n'a pas de preuve évidente, quoiqu'il est théoriquement possible que cette maladie naisse d'une réaction allergique aux bactéries ou à leurs sécrétions. On s'entend toutefois pour dire que l'élimination des foyers d'infection chez ces malades atteints d'arthrite rhumatismale grave ne constitue pas un traitement curatif.

L'art de guérir doit donc encore tenir compte de l'infection "focale" puisqu'il apparaît que des foyers infectieux jouent un rôle dans la causalité de certaines maladies et que, théoriquement, ils peuvent être mis en cause dans l'évolution de certaines autres. D'autre part, il faut condamner l'élimination aveugle de tous les foyers douteux ou en puissance chez les personnes qui ne se plaignent d'aucune maladie. Kolmer (1) et Kern (2) nous suggèrent une conduite à tenir dans ces cas. Chez des malades souffrant de maladies habituellement causées par des foyers infectieux, Kolmer craint qu'il faille supprimer d'abord le foyer original, soit par une médication, soit par une chirurgie appropriées et ensuite traiter l'affection secondaire, si elle est causée par une infection active. L'élimination des foyers infectieux suffit parfois à faire disparaître les symptômes organiques, quand la maladie est prise à son début; dans les cas avancés, on ne peut espérer le même succès, mais la suppression des foyers peut faciliter à l'organisme son adaptation à cette situation morbide.

Quand on croit que le malade ne souffre pas de maladies qui sont causées par l'infection "focale," Kern conseille d'enlever quand même tous les foyers infectieux actifs, s'ils semblent exercer une influence défavorable sur la santé de l'individu. Le patient et le médecin doivent bien comprendre que cette suppression des foyers n'aura rien à faire avec la maladie elle-même. Les deux auteurs sont d'avis qu'un foyer actif d'infection, chez une personne normale, doit être traité

non seulement pour éviter qu'il ne produise plus tard des complications à un endroit éloigné, mais pour rectifier un désordre. Kern écrit: "Il vaut mieux garder une maison vide que d'y loger un mauvais locataire. "La prévention d'une maladie secondaire est plus importante qu'un assaut direct sur un foyer d'infection. L'administration d'antibiotiques ou de sulfamidés, durant les périodes de l'année où les malades souffrant de

lésions cardiaques rhumatismales sont plus susceptibles d'être atteints d'infections du système respiratoire, est maintenant une pratique courante pour prévenir des attaques répétées des lésions dont ils souffrent; de plus, ces médicaments préviennent la septicémie qui accompagne ou suit l'ablation de dents ou d'amygdales infectées chez les malades atteints de troubles valvulaires ou de maladies congénitales du coeur.

1. Kolmer, J. A.: Focal Infection in Relation to Health and Disease, J. Am. Dent. A. 45: 139 (Aug.) 1952.
2. Kern, R. A.: Symposium on Infectious Diseases: What is Left of the Theory of Focal Infection, M. Clin. North America 34: 1705 (Nov.) 1950.
3. Irons, E. E.: The Theory of Focal Infection: Its Influence on the Practice of Medicine, Proc. Inst. Med. Chicago 16: 265 (Dec. 15. 1946.)

Nouvelles de l'Association

Réunion annuelle de 1954

On vient de compléter l'organisation de la réunion annuelle de l'A.D.C., qui aura lieu à l'Hôtel Algonquin, à St-André-sur-Mer, au Nouveau-Brunswick. Les dates de la réunion seront les suivantes:

Bureau des Gouverneurs, du 2 au 5 sept.
Congrès du 6 au 9 sept.

Comme on le sait, la réunion est sous l'égide de l'A.D.C. et de l'Association Dentaire du Nouveau-Brunswick.

La réunion de 1953 à Montréal aura lieu aux dates suivantes:

Bureau des Gouverneurs,
du 14 au 17 octobre
Congrès,
du 18 au 21 octobre

Les facilités d'enseignement dentaire sont taxées au maximum aux Etats-Unis

Le Service de Santé publique des Etats-Unis vient de publier un fascicule de 83 pages, exposant les résultats d'une enquête sur l'état financier et sur les besoins d'écoles dentaires dans ce pays. Ce rapport compilé par le Dr Leonard A. Schule, directeur général du Service, ren-

ferme cette phrase: "L'augmentation des frais d'enseignement dentaire affecte durement les écoles dentaires des Etats-Unis." Des quarante écoles, dont fait mention le rapport, seize affichent des déficits qui se totalisent à \$1,600,000. L'enquête met de l'avant les besoins de ces écoles, besoins qui ne peuvent être satisfaits, particulièrement des facilités plus grandes pour la recherche et l'augmentation de personnel enseignant et autre; ces deux items exigeraient \$60,000,000.

Les frais de scolarité représentent le tiers des revenus des écoles dentaires. Le gouvernement ou les municipalités doivent solder la différence. Seulement 5% des revenus proviennent de dons et d'octrois spéciaux. Le Dr Schule note que l'incertitude des revenus de l'avenir empêche les écoles d'élaborer des projets et de satisfaire leurs nécessités les plus urgentes.

Ce rapport fut préparé à la demande du Conseil d'Enseignement dentaire de l'Association Dentaire Américaine, qui avait constitué un Comité de cinq membres pour servir en qualité d'aviseurs.



—Photo from Canadian Government Travel B

**A PAIR OF SKIERS LOOK DOWN ON A SKI SCHOOL IN SESSION
DEEP IN THE LAURENTIAN MOUNTAINS OF QUEBEC**

"When you have shut your doors, and darkened your room, remember never to say that you are alone, for you are not alone; but God is within, and your genius is within and what need have they of light to see what you are doing?"

EPICETUS



MAURICE L. DONIGAN, D.D.S., F.I.C.D.
Montreal, P.Q.

Chairman Joint Convention Committee 1953.
President Montreal Dental Club.
Governor College of Dental Surgeons, Province of Quebec.
Assistant Professor of Orthodontics, Faculty of
Dentistry, McGill University.



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No. 2

Permanent Relines at the Chair

by WILFRID D. CLARK, D.D.S., Hamilton, Ontario

THE self-curing acrylics which have been developed for use in denture work at the chair are now at the point where their advantages have been proven and their use justified. The colour is good and permanence appears more or less assured.

With care, and with occlusion given its proper consideration, the final results seem to surpass those obtained from the usual procedure of relining a denture with wax, compound or paste and subsequently processing the change into the denture in the laboratory. This may be so because the usual variants introduced by heat cure, faulty flasking and occlusion changes are eliminated. Almost invariably a relined case returns from a dental laboratory with the occlusion disturbed. On the contrary, the self-curing acrylic technique actually better the occlusion. The use of this material* demands good technique and cleanliness but the accuracy of the results and the fact that the time element is so much shorter would appear to make its use important.

It is worth considering that some of the best prosthodontists have, for a long time, recommended relining of dentures (especially the lower) before allowing the patient to receive them for the first time. This seems to be an admission of an inability to construct dentures from original impressions and

to incorporate a balanced occlusion on the articulator which will correspond exactly with mouth conditions. The likelihood is that, ideally impressions are best taken within the dentures after processing and with balance established. The functional pressures are then able to determine the distribution of the base material under the most favourable conditions. The use of self-curing acrylics within the finished denture gives much of this effect.

BUILDING IN BALANCE

Of course, occlusion is the *sine qua non* of the procedure and should be perfected before any attempt is made at relining. Experiments have shown that balance adds from $\frac{1}{4}$ to $\frac{1}{2}$ greater efficiency during mastication and therefore no effort should be spared in obtaining it.

In this connection it is interesting to note that the self-curing acrylic can be used as an aid to obtaining balance. The use of the articulator in perfecting the occlusion of the finished dentures is most advantageous but nevertheless for those operators who do not use an articulator for grinding in cases, there can still be great help through use of this material.

Irving Hardy of Tufts College suggests the use of an acrylic "ramp," either in the position of the lower second molar or directly behind it (the upper second molar being left off or

*Durabase, Tritex, etc.

set with a sharp angle to eliminate all occlusion from it). He cures these ramps into the original denture form but it can also be added to a denture at any time through the use of "chair-side" acrylics.

Technique:

If, upon examination it is evident that balance is nonexistent or partly so, roughen the lower denture in the areas of the second molars or just behind them. Paint these two areas with monomer and to each of them add an amount of soft acrylic equal in bulk to half that of a molar. If the cases have been mounted on an articulator, swing the moving member to each lateral position and into protrusive several times. The distal margin of the upper molar will carve the acrylic addition into a pattern which will provide balance.

For the man who depends on mouth grinds, the two ramps of soft acrylic are added outside the mouth and the case inserted. The patient is encouraged to make movements corresponding to those which are carried out on an articulator. Have him overdo these movements so that those patients who habitually assume widely eccentric positions are precluded from disturbing the dentures by their extrafunctional habits.

When the acrylic in the two ramps

has set hard, they may be trimmed and polished.

RELINING AN UPPER DENTURE

We will assume that the occlusion is smooth-riding and balanced. The upper denture, if necessary, may now be relined. The only exception to this is made when the full lower denture also needs relining—in which case it should be done first. There is a considerable advantage in, first, having the lower denture well stabilized. It is much easier then to reline the upper denture and prevent the commonly seen advancement of the upper denture in a labial direction during the procedure.

Technique:

The upper denture should be thoroughly cleaned on the tissue side and the margin trimmed 1 mm. to give a clean finishing line. It is usually possible and advantageous to thicken the buccal wall in the vestibule area from the cuspid back. Roughen the buccal wall from the margin half way to the teeth. This will add to the retention of the new material in the vestibule areas. The teeth should be covered with lacquer (Justi Glaze). Next, use vaseline to further cover the teeth and the labial and buccal walls half way up to the denture margin. With a camel hair brush, paint the tissue side of the denture with monomer. (Fig. 1.)

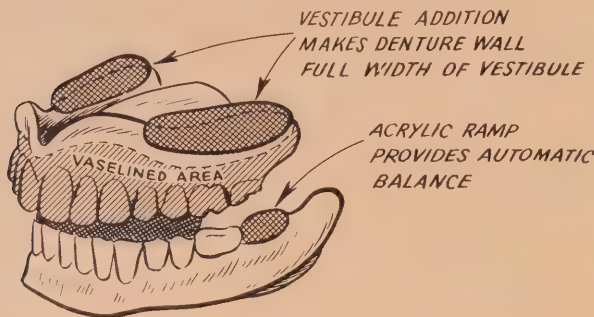


Fig. 1

Vaseline all the occlusal surfaces of the opposite denture to prevent any of the acrylic, which may wander, from adhering.

Before preparing the mix of acrylic, it is a great help to rub the whole ridge and the palate areas of the mouth with a very thin layer of Nupercainal or any other of the anaesthetizing ointments. This will serve to reduce the sting of the material and, more importantly, prevent the sticking of the acrylic to the tissues in these areas.

The Mix:

Cool all materials and mixing jar and spatula, especially in hot weather, to delay setting. Make the mix according to manufacturer's directions, being a little generous with the monomer especially when relining an upper denture. Always make a full size mix so that there may be a surplus for additions.

First Insertion:

Cover the tissue side of the denture with about two-thirds of the mix. Dip in cold water and insert in mouth without too much pressure. Be very cautious to keep the denture back against the ridge in the anterior area. It must not be allowed to project at any time during any of the insertions. (However, where it is going to be an advantage from the standpoint of aesthetics to have the denture a little fuller or to open the bite or to do both, it is very simply managed at this time provided that it is done within a very limited range). After ten seconds in the mouth, remove denture, wash in cold water at the same time the patient rinses the mouth with a cold solution of mouthwash for twenty seconds.

Second Insertion:

Before the second insertion, add some of the material in the jar to the denture at any point where it seems to be short. Secondly, add a generous amount to the denture margin on each side from cuspid back to second molar. A thickened margin in these areas will add a good deal to the retention

of any upper case. All additions should be smoothed out with a wet forefinger to help eliminate creases. The denture is now dipped in cold water and inserted for the second time. The patient is encouraged to occlude lightly but not to advance the denture. If necessary, hold it back to where it best satisfies aesthetics. After fifteen seconds, remove, and have the patient rinse with a cold solution of mouthwash. Check denture for deficiencies of material and/or creases.

Third Insertion:

After making any necessary additions, smooth out creases with wet forefinger and dip denture in a bath of sweet almond oil. (Fig. 2.) This oil has two advantages, one of providing a smooth surface and, secondly, of eliminating sting. The patient is allowed to occlude again and when we are satisfied with aesthetics and the general position of the denture, a hot solution of Lavis (approximately 110°) is provided. For the next five minutes, the patient will use the hot solution to help get a primary set of the material in the mouth.

At the end of this time, by lifting the lip, we can examine the acrylic with an explorer to make sure it is firm. This step guarantees that there will be no chance of distortion through handling the acrylic while soft.

Remove from mouth and place the denture in a bowl of hot water (150°). Leave for fifteen minutes. It will then be ready for final trimming and polishing.

RELINING THE LOWER DENTURE

The relining of the lower denture follows the same pattern as that given for the upper denture except that there are no additions made along the buccal walls. In place of these, we make one thickening in the sublingual area, that is, on the lingual margin from second bicuspid to second bicuspid. (Fig. 3.) This addition will shape itself to just about the right depth if

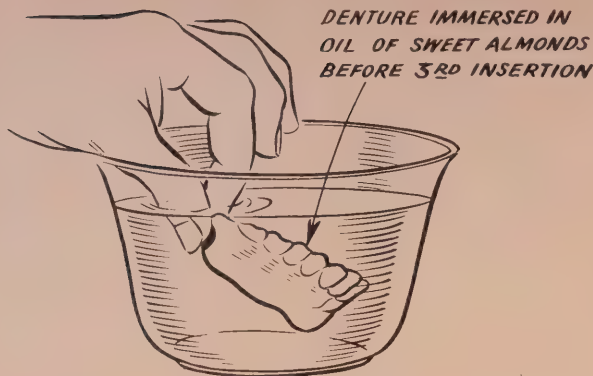


Fig. 2

**ADDITION OF RELINER ACRYLIC
TO MAKE SUBLINGUAL EXTENSION**

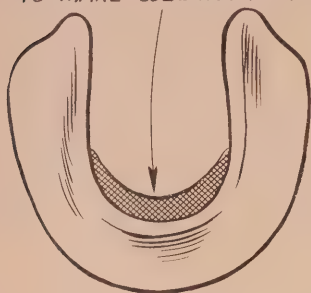


Fig. 3

no mention of the tongue is made to the patient. However, it is always better if the extension is somewhat shallow rather than too deep. After the material has set, it is trimmed to $\frac{1}{4}$ -inch in thickness. The rest of the denture should be $\frac{1}{8}$ -inch thick at the margin.

If any creases have appeared after acrylic is set they are easily eliminat-

ed by making a very small soupy mix of the acrylic and filling in. Place the denture back in the hot water for a fast set.

Trimming is very quickly done with a steel rotary file such as is used by wood-workers. It will fit a Jacob's chuck on a laboratory lathe. When denture margin is shaped up, smooth with rag wheel and pumice. Finish by polishing with "Shurshine" and an Ash wool polishing wheel.

One patient in ten will still get a stinging sensation when the finished reline is inserted. This is most easily overcome by drying the tissue side of the denture and painting it with Justi Glaze. This is allowed to dry for two or three minutes before insertion.

On insertion in the mouth, the occlusion will be found to be extra good and will require no further care. The reline helps to perfect it. It will also be observed that many patients will be completely free of sorenesses from this time on.

296 Ottawa Street North.

"So long as enthusiasm lasts, so long is growth still with us."

No one is useless in this world who lightens the burden of anyone else.—Charles Dickens.

A Surgical Diagnostic Problem

by GEORGE A. MORGAN, D.D.S., C. D. SWAN, M.D., and W. L. ATTRIDGE, D.D.S.,
Toronto, Ontario

ONE OF the most frequently roentgenologically, retained roots, is that of the lingual root of the maxillary, first molar. When this root overlies the maxillary antrum, as it frequently does, it presents, not only a diagnostic problem but one of surgical approach.

Such a case is presented:—

The patient, a lady of 30, was referred for the removal of a retained root in the maxillary, right, first molar region, (figure 1).

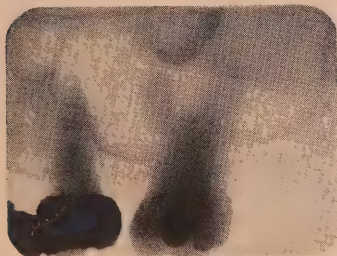


Figure 1. Pre-operative dental x-ray, maxillary, right molar region illustrating retained root in first molar area.

Patient's history is that of the removal of the maxillary, right, first molar some ten years previous.

The surgical approach problem is one of vital importance, since a pre-operative diagnosis must be made as to the exact location of the retained root. It may lie either buccal to, lingual to or in the maxillary antrum. It may also lie between the lining and the bony wall of the maxillary antrum.

With no previous history to serve as a guide in this case, other than the previous removal of the tooth, it was thought: 1. Due to the size and shape

of the retained fragment, that we were dealing with a lingual root. 2. Due to the upright position of the fragment, that this retained root was lying in its original position in the jaw which in this case, would mean that it was lying lingual to the maxillary antrum, and not in it.

At operation a lingual flap was made, bone removed over the retained

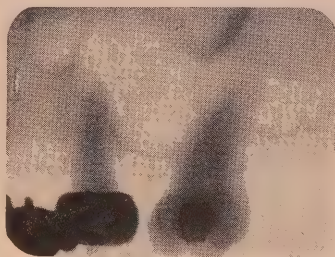


Figure 2. Post-operative dental x-ray, maxillary, right molar region illustrating retained root removed.



Figure 3. Pre-operative occlusal x-ray illustrating lingual position of retained root in maxillary, right, first molar region.

root and the root tipped out lingually. Post-operative x-ray, (figure 2). In many instances an occlusal x-ray,

(figure 3), will do much to accurately locate the position of posterior, maxillary retained roots.

Dental Oral Surgical and Medical Treatment of Some Maxillary Sinus Conditions*

by HENRY L. FREELAND, D.D.S., F.A.C.D., Calgary, Alberta

IT IS a personal and professional privilege for me to accept your invitation to discuss with you today some matters of mutual professional interest. Dentistry in general has come a long way during the past 50 years, and Dental Oral Surgery in particular, that phase of dental practice most closely related to your own specialty in medicine, has made remarkable advances. These advances have focussed the attention of all of us upon the inter-relationship of our responsibilities to our patients and it is in that light that I present this paper to you today.

To men such as yourselves it may be interesting to note the broadening scope and expanding concept of present-day thinking concerning Dental Oral Surgery as evidenced by the published opinions of some of the leaders in my profession. In the January 1951 issue of the *Journal of Oral Surgery of the American Dental Association*, Joseph L. Bernier, D.D.S., M.S., states as follows: "Oral diagnosis cannot be considered apart from general disease processes which are responsible for the patient's deviation from normal. This involves extensive and continuous study. It was an unfortunate situation when, at an earlier time in dentistry, we thought of oral diagnosis as centred about the decisions referable to the construction of dentures and bridges. These matters are, of course, extremely important but we have now come to realize that the most important aspect of oral diagnosis is that which deals with the individual as an organism and involves the under-

standing, detection and treatment of diseases that are often unassociated with the mechanics of restoration. The lips, the tongue, the floor of the mouth and perhaps the major salivary glands, are certainly geographically within the field of dentistry."

Perhaps also, as I have found myself, even the maxillary sinus, at times, must be considered a legitimate dental area.

In the January 1950 issue of the *Journal of Oral Surgery*, Reed O. Dingman, M.D., D.D.S., of Ann Arbor, Michigan, states as follows: "In order to give the patient the best possible service in the management of diseases of the mouth and associated structures, treatment should be instituted by the specialist best qualified by training and experience to handle the situation, whether he be a physician or dentist. The dental oral surgeon, in order to hold his own or to gain ground in the management of these problems, which by virtue of his training and experience he is best able to handle, must be a progressive individual."

Specifically, today, it may prove interesting to discuss several case histories of maxillary sinus conditions which came to my attention and required treatment in the course of regular dental practice. An unkind and probably poorly informed fellow once said that the maxillary sinus had financed more university educations for the families of rhinologists than any other structure of the head and neck. However that may be, it is true that this same sinus has caused more

*Presented on April 5, 1952, to the Ophthalmological and Otolaryngological Society of Alberta.

headaches for the exodontist and dental oral surgeon than any other part of the oral cavity with the possible exception of the third molar region.

From a dental standpoint, pathosis of the maxillary sinus may be predisposed by abnormalities of odontogenic origin, or by non-odontogenic conditions which may later invade the strictly dental field and its structures such as the alveolar ridge or the floor of the sinus. In the first group there may be root-ends of teeth forced into the sinus during extraction procedure—here it must be emphasized that roots of teeth are sometimes developed within the sinus itself and that sometimes the most careful operational technique on the part of the exodontist may still result in a root-end being left in the sinus—maxillary third molars of very young patients forced into the sinus during removal, odontomas in the third molar region, unerupted and aberrant teeth found in the sinus, and dental cysts of developmental origin. In the second group there may be found, for example, globular maxillary cysts which may be either acquired or developmental in origin, which involve the dental arch by destroying the alveolar support of the teeth or the floor of the sinus itself by cystic pressure.

CASE 1.

REMOVAL OF ROOT-END FROM SINUS

Patient—Male, aged 40.

The lingual root of the upper left first molar was lost in the sinus during extraction procedure. The dentist made no effort to recover the root at the time and there was therefore, no enlargement of the sinus aperture. The case was referred for treatment the same day.

Procedure. A good blood clot being present in the tooth socket, the antro-oral aperture was allowed to heal normally without interference. Four days later occlusal x-rays were taken to determine the buccolingual position of the root fragment in the sinus. The root was seen to be lying low on the

floor of the sinus in lingual version.

Conduction anaesthesia was obtained by injection in the palate in the anterior and posterior palatine areas and on the buccal by injection in the infraorbital and zygomatic areas. A horizontal incision was made high in the mucobuccal fold over the first and second bicuspid and first molar region, the purpose being to develop an elliptical flap of adequate dimension to expose the buccal wall of the sinus, with the apex of the flap downward. The sinus was then entered through the buccal wall with bone drills and that aperture suitably enlarged. The root was visible and easily removed. The flap was sutured with absorbable sutures. The sinus was not irrigated and no packing or dressings of any kind were used. Care was taken however, to make certain that no bone fragments from the cutting of the antral wall were left in the sinus.

Since healing of these areas is speeded when intranasal openings are present in the sinus wall, the patient was referred to the rhinologist to make certain this opening was present, and if not, to have one made, and under his care the only postoperative treatment consisted of the administration of 400,000 units of penicillin daily for four days.

Conclusions. This case illustrates the importance of foregoing any attempt by the dentist to remove the lost root through the root aperture which would mean enlargement of that aperture and invite possible failure to recover the root in any event; the relatively simple operational technique required to recover the root through the buccal wall of the sinus; the elimination of the danger of developing a permanent antro-oral fistula in the tooth-socket region, and the reference of the case at once to the rhinologist. The proper time to refer the case to the rhinologist, if the best interests of all concerned in the case are to be served, is in the immediate postoperative period, before and not

after any possible complications may have arisen.

CASE 2.

RECOVERY OF AN INFECTED FIRST MOLAR ROOT LOST IN THE SINUS DURING EXTRACTION PROCEDURE, AND THE REPAIR OF THE ANTRO-ORAL FISTULA

Patient—Female, aged 35

The upper arch was edentulous, the tooth being removed being the last tooth to be extracted at that time. An attempt had been made to recover the root by enlarging the root aperture resulting in an opening in the floor of the sinus 5mm. by 4mm. in area. The root had not been recovered; the sinus was infected. The accident had occurred two weeks before the case was referred for treatment.

At this point a digression from the discussion may be in order. Empirical methods of treatment are wisely frowned upon by all recognized authorities. Nevertheless, it may sometimes prove to be in the best interests of the patient to depart to a degree from this rule, to attempt a method of treatment designed to minimize further destruction of vital tissue and structure, and to achieve the objective. To illustrate: In this case, since the antro-oral aperture was already very large and the sinus already infected, no further hazard to the patient was indicated by attempting to remove the root through the existing aperture. It is difficult to justify a Caldwell-Luc operation high in the mucobuccal fold when an adequate aperture for the recovery of the root already exists. It is probable that some will disagree with this theory.

Procedure—Following adequate anaesthesia, an attempt was made to recover the root through the antro-oral aperture with sterile silver wire loops. This attempt failed due to the bone formation on the floor of the sinus. Another empirical method was resorted to, this time with success. The root was floated out of the sinus, into the mouth, by flooding the sinus with

saline solution. This method appeared to be, and resulted in, a practical solution of the problem.

Having recovered the root, the next step concerned the repair of the antro-oral aperture. This is most important and attention should be carefully directed to it since this patient would have to wear a denture and normal function of the denture would depend upon a return to normalcy of the alveolar ridge which would have to support the denture. This poses a question for us when we are considering the interrelation aspects of the professional responsibilities confronting our two professions: How well have we served the patient in such a case as this, if by failing to combine our knowledge and talents, we have left the patient with a normal sinus but with dental oral structures so hopelessly destroyed as to make impossible the satisfactory prosthetic dental restoration of the mouth that is required? Or conversely, a patient with normal oral conditions from a strictly dental viewpoint but with a chronic sinus as a result of failure to correlate our efforts and treatment?

The antro-oral aperture was repaired by raising a palatal flap distal to the first molar area. Then the buccal mucosa and periosteum were elevated. The epithelial lining of the fistulous tract was completely removed. The palatal flap was then turned into position to cover the osseous opening of the aperture. The sutures were carried well into the buccal tissues and sutures were made in the palatal area as well.

The rhinologist made a suitable intranasal opening and penicillin was given for the usual period. Recovery was normal. A denture was inserted in ten days.

To be perfectly frank, not all flap procedures result so happily.

Conclusions — There are conditions which justify reasonably empirical treatment.

CASE 3.

TREATMENT OF A GLOBULAR MAXILLARY CYST.

Patient—Female, aged 14.

A globular maxillary cyst, in relation to the treatment, may well be described as a "no man's land" case as between the rhinologist and the dental oral surgeon. It often depends upon who sees the case first but regardless of priority the treatment demands the best talents of both. Globular cysts may be acquired, or be developmental, or both. Sometimes such cysts arise from groups of cells that become trapped between the nasofrontal process at the time of the development of that part of the maxilla.

Sometimes they are a result of a blow or other traumatic injury. The teeth in the area may become quite loose without losing their vitality. For the reasons mentioned above, globular cysts occur invariably in the region of the upper lateral and canine teeth. The loosening of the teeth is important to remember since if the teeth are suspected as being the predisposing cause of the trouble they may unwisely be removed resulting in complete destruction of that area of the alveolar process rendering impossible the restoration of the dental arch by any known method of dental prothesis. These cysts may become very large in area and may press against the lining of the sinus although they seldom invade the sinus. When invasion of the sinus does occur such cysts may completely obliterate the sinus as well as the alveolar support of the teeth.

The known aetiology of this case was that the patient had been struck by a softball in the region of the upper right canine tooth at the age of twelve. The patient, as soon as the swelling became noticeable, was sent to a rhinologist, who for some obscure reason, attempted to treat the condition by draining the cyst through the palatal wall. This treatment, of course, failed. A second rhinologist

advised the removal of all the teeth from the lateral incisor to the second bicuspid. Fortunately, for the patient, and possibly for the rhinologist also, this course was not followed. With all due respect to your profession, it is almost a certainty that more dentists than rhinologists would perceive, at once, the danger inherent in such a radical course of treatment and would be able to evaluate the condition satisfactorily. Again, the necessity for close co-operation between the dentist and the rhinologist must be stressed.

Procedure — The x-rays of the case were sent to Dr. Reed O. Dingman of Ann Arbor and the treatment which he suggested was followed. Keeping in mind the Partsch technique and with the co-operation of a rhinologist a flap was made high above the lateral and canine apices to avoid interference with the nerve supply of these teeth. The apex of the flap was made downward and the horizontal length of the flap was made large enough to include the entire cystic area. The cyst was found to be filled with fluid. This was drained. No attempt was made to enucleate the epithelial lining of the cyst. The apex of the flap was turned upward and inward and was sutured to the upper epithelial lining of the cyst, on the roof of the cyst cavity, so to speak. The cavity was packed with petrolatum gauze to maintain the opening. This was continued for three weeks with changes of gauze every second day and with constantly diminishing sizes of packings.

In these cases the epithelium of the buccal mucosa becomes continuous with the posterior portion of the cyst wall and assumes the characteristics of normal mucous membrane eventually. After three weeks the packings were discontinued. The bone cavity had diminished in size and area. When the pressure of the cyst had been removed the teeth again became solid in their alveolar attachment. The patient was sent to her home three hundred miles away and her family dentist was re-

quested to irrigate the cavity with saline solution twice weekly. This was done for six months during which period occlusal x-rays were taken showing the gradual regeneration of bone. In one year recovery was complete. The area involved had diminished in size from the original silver dollar extension to that of a twenty-five cent piece.

Conclusion — Where globular maxillary cysts are present no teeth should

be removed under any circumstances until the cystic condition has been overcome.

GENERAL CONCLUSIONS

In the light of our expanding knowledge, the rightful demands of our patients force our attention to the matter of the intelligent co-operation of the members of our respective professions.

715 Greyhound Bldg.

The Principle of Wiring in the Treatment of Fractures

by Dr. JOSEPH FREEMAN, Winnipeg, Manitoba

IN MOST texts on fractures one or possibly two methods of wiring are described. The details for the average practitioner or the student are usually inadequate. It is my belief that a good knowledge of wiring of the teeth is essential in the treatment of fractures of the maxilla and mandible. The prompt reduction of displacements followed by secure immobilization of the fragments to give complete rest to the injured parts constitutes the best means we have at our disposal for the prevention and control of infection of the bone at the site of the fracture. Displacement and over-riding tends to open up spaces in the region of the fracture. This permits the entrance of infection, and the recurring movement of the parts tends to further injure and increase the inflammatory reactions of the surrounding soft tissue. Unless necessitated by the general condition of the patient and the presence of other serious injuries, there should be no delay in instituting adequate treatment of the fractured jaw.

It is my intention at this time to describe various methods of wiring now in use, giving the advantages and disadvantages of the method and showing their application to the teeth. Combinations of the methods may be used depending upon the type of fracture and the condition found in the mouth

but anyone treating fractures should have a thorough knowledge of the methods in use and apply the method of wiring most suitable to the individual case in hand. A knowledge of the properties of the wire or materials to be used is very essential and in twisting wire around the teeth stresses and strains within the wire itself are formed and torques are set up. The handling of wire should be done with a minimum amount of twisting and turning so that after the method of wiring is applied to the teeth and the fracture completely reduced, absolute immobilization is secured. This is made easy with the proper method of wiring and the excellent quality of wire on the market available to the operator.

Probably the earliest attempt at dental fixation of a fracture of the mandible was to fasten the teeth on both sides of the fracture to each other by means of a ligature crossing the site of the fracture. Hippocrates recognized that to be efficient the ligature must be attached to the teeth not immediately adjacent to the break.

So far as we know Dr. Thomas L. Gilmer of Chicago, first advocated the direct fixation of the lower jaw to the upper jaw by means of the teeth as a treatment of fractures of the mandible. In Gilmer's original method the wires are twisted around the necks of

two adjoining teeth in the upper and lower jaws, the upper and lower wires being twisted together. There is a disadvantage in this method; in order to open the mouth the wires have to be cut, and if one wire breaks it is necessary to remove all and repeat the entire procedure to replace one wire.

EEYELET WIRING (Interdental)

Indirect dental or interdental fixation by wiring the teeth of the mandible to those of the maxilla has proven to be a most effective and altogether satisfactory method of treating probably ninety per cent of fractures of the lower jaw. The loop or eyelet method as recommended by Ivy is most useful. This has been slightly modified by Lieut.-Col. G. Franklin, C.D.C. (retired) in that more care has been taken in the preparation of the eyelet loop.

Since there is danger in cutting the interdental papilla, especially between two centrals, the wire must now follow the curvature of the enamel surface. One must exert extreme care in passing the wire through the interproximal space. The double wire is passed between the pair of teeth selected from the labial or buccal to the lingual. Fig. 1.

One tail is passed through the interdental space from the lingual to the labial on the distal of one anterior and the same process is repeated with the other tail of the eyelet loop. Then one tail is passed through the eyelet and both tails are now grasped with haemostatic forceps, Kelly forceps, or pliers, depending on what instrument is used. Traction is now exerted both to tighten the loops around the teeth and to draw the eyelet into the interproximal space. The presence of one tail through the eyelet will prevent it from being pulled too far in. Unless the eyelet is drawn well into the interproximal space it may be found that the upper and lower eyelets overlap, making it impossible to exert any tension upon them by the intermaxillary connecting wire.

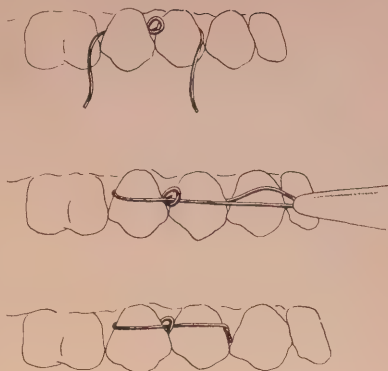


Fig. 1.

Both ends of the wire are crossed, the angle formed by the two wires is bisected.

Tension is applied and the twist made. Do not depend upon the wire alone to take up the slack while tightening.

The excess amount of wire is now cut off within the twists of the wire to allow no free ends which will irritate the oral mucosa.

A slight curve is now placed on the twisted end and this is then turned into the interproximal space to follow the curvature of the enamel and that of the interdental papilla. This twisted end of wire must not impinge on the papilla and must hug the enamel surface. Fig. 2.

OVERLAPPING LOOP UNITS

In those cases where additional strength is required, or additional loop units must be applied, not only for reduction but to have a sufficient number of intermaxillary tie wires running downwards and backwards the loop units may be placed on the teeth in such a manner that they overlap giving a loop at each interproximal space. Fig. 3.

If four teeth are used the loops secure these teeth as a single unit but this may be continued around the whole arch fixing it as one complete unit providing strength and simplify-

EYELET LOOP WIRING

Fig. 2

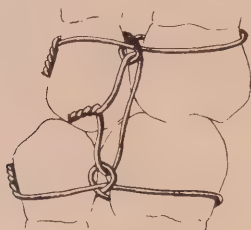
ing the problem of maintaining occlusion and absolute fixation.

PLACING OF AN EYELET ON A SINGLE TOOTH

Various forms of eyelet wiring may be placed on a single tooth depending upon what type the operator uses. It is a good policy, however, to use one form of eyelet wiring in that it standardizes the technique.

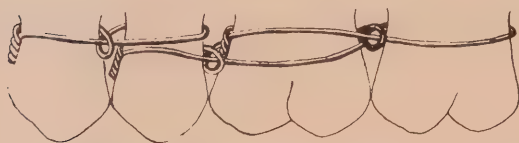
There are other methods of placing these loops around the teeth and even a single strand of wire may be passed around the tooth and fastened securely.

If a single tooth is to be used in



TWISTED LOOP WIRING

THIS UNIT MAY BE USED: ① WHERE TWO ADJOINING TEETH HAVE NORMAL CONTACT, ② WHERE THE INTERPROXIMAL SPACE PERMITS THE PASSING OF DOUBLE WIRES,



OVERLAPPING LOOP UNITS

THIS AFFORDS ADDITIONAL STRENGTH & FOUR TEETH SECURED TOGETHER AS A UNIT,



TRACTION WIRE MAY BE PASSED THROUGH LOOPS AND USED TEMPORARILY TO PULL A DISPLACED FRAGMENT INTO CORRECT POSITION & OCCLUSION,

Fig. 3

helping to hold the fragment and the diagnosis is such that it is to be extracted when prosthetic restorations are contemplated, after union is complete this tooth may be notched with a bur and the loop or wire placed in the notch.

Some men feel that a drop of solder may hold a loop more securely; the soldered loop may be placed on the tooth in any manner described above. If, however, a loop is properly made the use of solder may be eliminated.

The eyelet loop method is based on the principle of placing one eyelet around two teeth that are in contact with each other. The unit of this wire requires two adjoining teeth with a fairly normal contact and an interproximal space that will be sufficiently large to permit the passage of two wires. Although now with the advent of stainless steel (dead soft) wire, a fine wire of .015" diameter may be used and this will allow the passage of two wires very easily through a fairly small interproximal space.

Suitable eyelets are placed upon the upper and lower teeth joined together by intermaxillary connecting wires or elastic bands according to the method used to reduce the fracture. Eyelet wiring is very suitable where there are sufficient pairs of opposing teeth. It is probably the best all-round method. The problem of securing complete immobilization with rubber bands is questionable. Fractures of the mandible or maxilla are best secured in occlusion by means of intermaxillary connecting wires. These should always be placed through the eyelets on the

most posterior teeth first and should not be tightened until they are all in place and the fracture reduced. The eyelets should be placed on selected teeth so that when the intermaxillary connecting wires are tightened they will tend to bring the fragments into correct apposition and occlusion.

A study should be made of the teeth and the proper teeth selected for the placement of eyelet loops. Sufficient eyelets should also be placed on the teeth so that additional intermaxillary connecting wires will run downwards and backwards to the eyelets on the mandibular teeth for stability and enough should be placed on as many teeth as possible to distribute the stresses and strains. There should be at least two connecting wires on each side of the fracture line.

Greater stability and immobilization is secured if as many intermaxillary connecting wires run downward and backward from the maxilla to the mandible as possible. The reason greater stability is secured in this manner is because the mandible moves forward and backward on the curve of Spee in a closed position Fig. 4. Having the wires running downward and backward prevents any movement however slight. This can easily be demonstrated by wiring up two sets of models of the upper and lower teeth in occlusion, one set having the intermaxillary connecting wires running downwards and backward from the maxillary teeth to the mandibular teeth. If the first set having the wires running straight down or down and forward is grasped between both

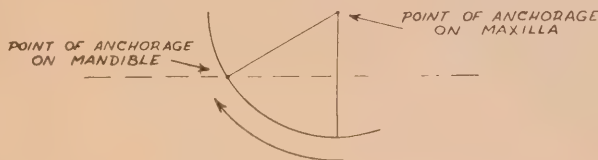


Fig. 4

The intermaxillary tie wires should if possible run downward & backwards on each side of the fracture line for absolute immobilization.

hands a slight movement may be demonstrated no matter how tight the connecting wires are twisted together. The second set grasped in the same manner and tested will show that no movement can be elicited at all.

There are certain points which one must therefore emphasize in the use of this method of wiring.

1. Teeth must be in contact.
2. Wire must be placed on teeth that will be in occlusion.
3. The units should be placed on the arch so that the intermaxillary connecting wires will bring the fragments into close apposition and hold them there.
4. Additional intermaxillary wires should run downwards and backwards to the eyelets on the mandibular teeth for greater stability.
5. Place on as many teeth as possible to distribute the stress and strain.
6. There should be at least two connecting wires on each side of the fracture line.
7. It should be placed on the teeth so that no intermaxillary wire will run between two teeth unless there is very good contact on both sides of the teeth.
8. Overbite and overjet—one can cause labial movement of the roots very easily.
9. Cannot be used on open bite cases except with extreme care.
10. Twists are always made toward the midline and bent out of the way.
11. All wire should be cut within the twists to prevent ends from irritating the oral mucosa.

RISDON TWISTED ARCH WIRING

Original Method, Fig. 5

A length of stainless steel wire (dead soft) .015" diameter or 24 gauge brass wire of about 12-14 inches is placed around the most posterior anchor tooth to be used below the contact point with equal lengths projecting from the mouth. This is twisted tightly around the anchor tooth. The first twist is important because the wire must fit snugly around the gingi-



Fig. 5

RISDON TWISTED EXTERNAL ARCH WIRING

Original method—posterior attachment on one tooth on each side & both arches are twisted together at the midline.

val border of the tooth. The wire is then twisted on itself and carried forward to the central. The same technique is repeated on the opposite side and the two twisted wires are then twisted together at the mid-line.

This method therefore consists of twisting a ligature wire into the shape of an arch wire and ligating it to the teeth. The advantages are that it is easily and quickly applied. It is a simple method and it gives good support all the way around.

The disadvantages are: It cuts across the interdental papilla; not easily kept clean; the anchor tooth must not be in the line of fracture; where teeth are missing it may cause movement if improperly used.

The Risdon external twisted arch wiring is an efficient method, because it secures direct dental fixation across the line of fracture and provides an arch for the insertion of tie wires to hold the teeth in occlusion. It may be wired to isolated teeth and to a number of teeth that do not present closed contacts so necessary for the successful application of loop units. It is par-

ticularly effective in fractures of the mandible.

In tightening of the arch wires there may be a tendency to make one half of the arch go up and one half go down. Placing of intermaxillary tie wires should help to overcome this. The ligature wires should be placed on each and every tooth but not on the teeth in the line of the fracture and they also should be placed in such a manner as to prevent the arch from cutting into the gingivae.

MODIFICATION OF THE RISDON EXTERNAL TWISTED ARCH

A simple method of modifying the original Risdon arch to avoid bulk in the midline causing irritation to the oral tissues is done by extending the twisted arch to the cuspid on each side (only) and joining one strand to a strand from the opposite side at the cuspids thus avoiding the bulk of having four wires twisted together in the midline. The twisted arch is ligated to every tooth in the arch.

Another modification is to start the arch on the most posterior tooth to be used as an anchor tooth on one side of the arch and twisting one continual arch which is ligated to each tooth in the arch and then this single arch is finally anchored to the most posterior tooth on the opposite side.

This is the most efficient method of placing a Risdon twisted arch wire on the upper arch. It avoids the bulk of having four wires twisted together in the midline and is the most rapid method of applying this type of wiring.

TWISTED ARCH BEGINNING WITH AN EYELET LOOP

An eyelet loop is formed on a long strand of wire and this is placed between the two most posterior teeth to be used. The eyelet is tightened in the manner described but is continued on in the form of a twisted arch which is ligated to each tooth. This is done on both sides and ended at the midline where both arches are twisted to-

gether as in the original method. This results in an eyelet loop on both sides of the arch. Fig. 6.



Fig. 6

RISDON TWISTED WIRE EXTERNAL ARCH WIRING

Modification using loop unit on two posterior teeth on each side continued around as a twisted arch and the arches twisted together at the midline.

The above method may be finished in the manner of the first described in the modified Risdon twisted arch thereby avoiding the bulk of four twisted wires in the midline.

Another method is the beginning of the twisted arch with a loop but continuing the arch around to the opposite side and finishing it at the anchor tooth. This also avoids bulk at the midline and may be very quickly applied.

This may also be modified using a loop on one side and the original method on the opposite side. To avoid midline bulk the twisted arches are ended at the cuspids.

Where there are missing teeth and the twisted arch is the method of choice it may be again modified in such a manner as to avoid movement of teeth and still give a very secure method of wiring. This may be started as the original arch modified in many ways as described above.

All these arches, although not indicated in each illustration, are wired

securely to each and every tooth except those in the line of fracture.

FULCRUM MODIFICATION OF THE RISDON TWISTED ARCH

A temporary method will first be described which will not control vertical displacement but which is efficient in fractures of the mandible where the patient has to be shipped as it is easy to apply.

An appropriate tooth is selected for the anchor, e.g. the first molar. Both ends of a strand of wire are passed to the lingual of this tooth and the arch is then twisted to the length desired thus the anchor point being the mesiolingual angle of the tooth selected. The twist of the arch should only extend to the tooth in the line of fracture and then two single (untwisted) strands of wire pass through the fracture line around the tooth gingival to the point of contact. The fragments are now controlled manually and ligature wires are placed on the cuspid and central anchoring the twisted arch and these are made as tight as desired. The two strands are now extended on the labial of the teeth and anchored to the first molar on this side which is opposite to where the arch was begun. The fracture is now reduced, held, the wires tightened and ligatures placed on all

the teeth. It is very easy to over-reduce a fracture with this method and therefore extreme care should be exerted.

This will serve as a temporary measure but to control vertical displacement an external or labial twisted arch should be used in conjunction with this method.

Another very useful modification beginning with a fulcrum as advocated by Dr. Carl W. Waldron, Fig. 7, may be used successfully in the reduction of a very troublesome displacement when the plane of the fracture extends from the buccal surface distal to the lingual surface which permits external and upward displacement of the posterior fragment. This type of fracture may occur anywhere in the lower arch. A simple method of fixation of the posterior fragment is as follows: A strand of wire—24 gauge brass or .015" stainless steel with a soldered loop, lock tie or twisted loop, which is passed around the gingival surface of the molar selected as an anchor tooth on the posterior fragment and then twisted securely by three or four twists on the mesiolingual angle of the tooth. The two ends are on the lingual side of the adjacent molar in the anterior fragment.

One wire is then passed from the

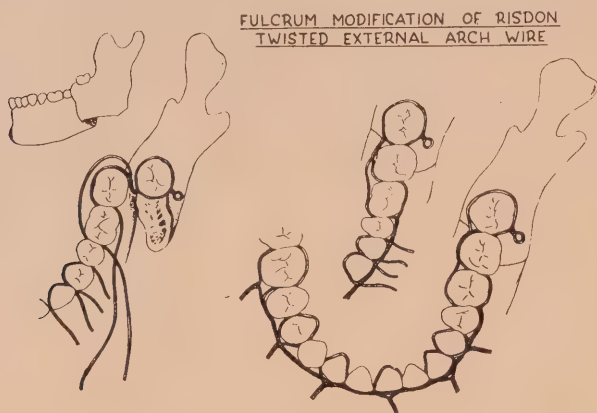


Fig. 7

lingual angle of the tooth. The two ends of the wire are passed on the lingual side of the adjacent molar in the anterior fragment. One wire is then passed from the lingual to the buccal through the mesial interproximal space of this molar and the other wire is similarly passed through the mesial interproximal space of the second tooth anterior to the fracture. When these wires are tightened and twisted on the buccal surface the tooth on the anterior fragment adjacent to the fracture becomes a fulcrum, and the displaced fragment is pulled and retained in normal alignment. If this type of fracture occurs in a more anterior region a twisted arch may be started on the most posterior selected and ligated to the anterior teeth. The fulcrum method may then be used on the teeth adjacent to the line of fracture and the fracture reduced. The Risdon twisted arch may then be brought right around and ended on the opposite side and may act as an additional support and a means of wiring the lower teeth in occlusion with the upper teeth.

The Risdon twisted arch, either in the original method or in any of its modifications may be used in conjunction with the eyelet method. It also may be used on either arch with the eyelet wires on the opposite arch. The eyelet method may be used alone or as stated in conjunction with the Risdon arch or any form of arch bar. This also applies to the Risdon twisted arch wiring.

INTERMAXILLARY MULTIPLE LOOP WIRING

Col. Stout, U.S.D.C.

This method was developed according to the authors for two reasons; to secure the maximal anchorage for traction and retention and to apply the required treatment as rapidly as possible.

Either brass ligature wire—24 gauge or stainless steel (dead soft) .015" diameter may be used.

The application of this method to

four teeth requires a strand of wire approximately 9" – 10" in length. If more teeth are included a longer wire will be necessary. The wire is passed through the interproximal space between the first and second molar from the lingual aspect. The wire is pulled through buccally and forward along the buccal surface of the teeth as far as the lateral incisor, allowing sufficient length for final twisting at the mesiolabial angle of the cuspid. The long lingual end is passed through the interproximal space, mesial to the first molar, passing gingivally to the wire lying along the buccal surface of the teeth. The long end is bent back on itself and passed through the same interproximal space, forming a loop encircling the short buccal strand. At this point a short metal rod approximately 2" – 3" in length and a diameter of $\frac{1}{16}$ " is inserted into the loop and held parallel with the buccal wire and in contact with the buccal aspect of the teeth. The lingual wire is now pulled tightly giving the loop its proper form. The lingual wire is then passed through the next interproximal space, passing above the buccal wire and the rod. This is returned through the same interproximal space thus forming the second loop—encircling the rod and buccal wire. This is continued between the next teeth and the lingual end drawn tightly so that the rod is held rigidly against the buccal surface of the teeth. The lingual wire is brought to the labial through the next interproximal space. Tension is exerted forward on the buccal wire. This will draw the loops into the proper position and give them the desired uniform size. The rod is now removed. The two ends of the wires are twisted a few times. The posterior loop is twisted three-fourths of a turn which will place it on a horizontal position, bringing the buccal wire slightly into the embrasure. The other loops are treated in the same manner. This adapts the wire well around each tooth. Starting again with the twisted ends, they are given the final adjust-

ment. The next adjustment of the loops is accomplished by giving each one an additional half turn. The loops are then bent gingivally so that they are in light contact with the gingival. Then by use of small elastic bands both intra maxillary and intermaxillary can be obtained.

In cases where teeth are missing the formation of loops can be interrupted and the wire twisted to bridge the spaces.

This method is recommended for use with elastic bands for slow traction and these may be removed quickly in cases of vomitus. It is indicated where there is a posterior displacement of the maxilla this may be used in conjunction with a Risdon twisted arch on the mandible and where complete reduction cannot be carried out during the operation. Its advantages are that it gives one loop between two teeth, can be used across a space, and can be used with intermaxillary wires. The disadvantages are in that it is not easy to apply, the length of time of application, works itself loose after a while and is difficult to replace.

ARCH WIRING

In those cases where teeth are few and far between, arch bars, which are attached to the teeth of the mandible or the maxilla or both, may be necessary in order to hold such remaining teeth securely in correct occlusion. Fig. 8. The originators of this method were Sauer in Germany and Gilmer in the United States. In certain cases this method has its advantages in that it supplies a rigid arch, can be used where only a few teeth are present and can easily be kept clean. It has a disadvantage in that it takes a long time to adapt properly. The most preferable arch is round wire of 1.7 mm. or approximately 14 gauge nickel silver. Round wire has the least contact with each individual tooth, is easily kept clean and is least injurious to the interdental papillae.

In the use of this method there are



Fig. 8

CONTOURED EXTERNAL ARCH BAR

certain principles that must be adhered to:

1. The arch must be adapted to be at rest against the teeth to which it will be ligated otherwise it forms a crude orthodontic appliance.

2. It may be adapted in the mouth by starting at one side on the most posterior tooth to be used.

3. It should be kept as close to the gingival margin as possible without any impingement.

4. The temper of the material used must be retained thus giving better support all the way around.

5. Impressions may be taken and the arch adapted to the models. If the fragments are displaced the models may have to be cut, the normal arc predetermined and then the arch adapted. The objection to this is that a predetermined arch may or may not be correct.

6. Spurs may be soldered to the arch after adaptation, for stays, to direct rubber elastics or intermaxillary wires.

7. If the arch is adapted directly before reduction the arch may be notched with a half-round file.

8. It must have no sharp ends.

9. It may be brought around the distal of the most posterior tooth and in that way, after ligation, may be used to pull the arch forward if necessary.

10. Advantage should always be

taken of the shape of the tooth in placement of the ligature wires.

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ETHICAL IDEALS FOR PROFESSIONAL MEN

The professional man should maintain a standard of competency in his own field, entirely apart from all considerations of public opinion or private gain. He may fall far short of his own standard, but he must never blur the distinction between good and poor work.

The professional man should consider his compensation, in whatever form it may be given to him, as a secondary end; and he should not only be content with a modest income, but also regard it as a part of his professional duty to make it clear to all concerned that a professional man is not interested in amassing wealth.

The professional man should take a personal interest in recruiting for his own and for other professions the most promising of the youth of the nation, and he should take a corresponding interest in the problems of professional education.

The professional man should deliberately cultivate honest criticism of his own and all other professional work, training himself to hate sentimental praise and ignorant faultfinding, and developing to the extent of his ability the difficult art of clear-sighted, constructive, critical judgment.

The professional man should regard himself as a guardian of the public interests in every situation where he finds those interests in jeopardy, because this is his first obligation to the society which has given him his professional education and opportunity.

The professional man should champion complete liberty of thought and expression, whether popular or unpopular, without yielding in the slightest degree his own convictions as to what is true or false, wise or foolish, right or wrong.

The professional man should encourage the experimental spirit in every department of human affairs, because he knows that all human progress has come about by this method.

The professional man should use every opportunity to promote better mutual understanding among men of different classes, creeds, nations and races, recognizing that his education and experience should enable him to rise above all fears and hatreds, and to serve as an interpreter and peace-maker among men—Frederick M. Eliot in Jour. of Oral Surgery.

"No physician, insofar as he is a physician, considers his own good in what he prescribes, but the good of his patient; for the true physician is also a ruler having the human body as subject, and not a mere money-maker."—Plato.

It Could Happen Here

by STEWART A. MacGREGOR, D.D.S., Toronto, Ontario

Prepared for the Endowment Procurement Committee of the Faculty of Dentistry, University of Toronto applicable to all dental colleges.

HOW often has it been said that many of the great discoveries of the past have been the result of accident? It is indeed true that an accident may have influenced to some extent the result of some great research project, but when all the facts are brought to the fore it will invariably be found that there was very little that was accidental about the result. For the most part these so-called accidents have been opportunities carefully improved on by genius.

One might also say the same about endowments. Often when we hear of some great endowment we are prone to sit back in bewilderment and attribute the success of the receiver to either luck or coincidence. However, when one delves more deeply into the matter one usually finds that the gift has not been the result of luck or coincidence but rather the fact that someone has taken advantage of the opportunity available in influencing the giver. Indeed, in many cases a great deal of time and effort has been put into the question of influencing the donor. It doesn't just happen.

An excellent illustration of this is the gift of the Kellogg Foundation. The Michigan State Dental Society was anxious to do something for the betterment of dentistry and thus saw fit to tax each member a few dollars each year to assist in establishing a research fund. The Kellogg Foundation was looking around for a project and when they discovered what the Michigan State dentists were doing they felt that here was a Society that deserved help. Thus the post-graduate school in Ann Arbor, Michigan, was inaugurated and as a result of this original interest on the part of a dental society many post-graduate schools on this continent have re-

ceived assistance from the Kellogg Foundation.

There are many dental societies in Canada and there may be many opportunities in this province for a society, through their own interest in the welfare of dentistry and humanity, to influence a donor, either lay or professional, to give financial support to the cause of dental education and research. The individual dentist can also do much in this regard. Many are called upon to speak before lay groups on dental health. It behoves all of us active in this field to take advantage of this opportunity to place before a stimulated audience the great need for financial assistance in the promotion of dental science. There are some among us, however, who feel they cannot give support to dentistry in this manner simply because they feel incapable of speaking to lay audiences. This need not prevent these individuals from lending a hand too. Day after day in the average dental office there are appreciative patients who might be glad to offer assistance. The opportunity is there; all we have to do is take advantage of it. One never knows! Little did Dr. Ervin A. Johnson in Boston know of the hidden desire to help dentistry that loitered in the heart of James Bennett Forsyth when he asked him to erect a Dental Clinic for Children. This endowment, through this great man, was the direct result of a practising dentist taking advantage of an opportunity while engaged in practice on an interested patient. Dentistry needs such leadership and let us be reminded of the words of the late King George VI: "No man can be a leader unless he has the desire in his soul to leave things better than he has found them."

The Forum

STERILIZATION IN DENTISTRY

by PROFESSOR SYDNEY D. RUBBO, Melbourne, Australia

Conclusions of paper in Australian Jour. of Dentistry, Feb. 1952

APPENDIX ON STERILIZATION PROCEDURES IN DENTISTRY

The techniques described below are based on the assumption that autoclaves and thermostatically controlled dry sterilizers are not standard pieces of dental equipment. Emphasis will, therefore, be placed on techniques using apparatus readily available.

General Remarks.

Direct flaming destroys appearance and temper of the instrument.

Every patient should rinse the mouth with a detergent before treatment.

Never store metal instruments wet, otherwise they will corrode and rust.

Thorough mechanical cleansing must precede all forms of sterilization. Avoid using abrasives as these will corrode instruments.

Less reliance can be placed on chemical than on heat sterilization.

Special Remarks.

1. *All Dental Instruments* (except those detailed below) 10 minutes in boiling water sterilizer to which 1% sodium carbonate or Neutralin (0.073%) $\text{NaNO}_2 + 0.168\% \text{Na}_2\text{CO}_3$ or 2% $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ has been added.

Pitfalls:

Place all instruments in the water so that they are fully submerged.

Interior of sterilizer must be free of grease, oil or coagulated debris.

Timing should be done by a time-set clock.

Forceps or locking instruments must be opened before sterilization.

Addition of alkali or Neutralin prevents rusting and corrosion.

Lifting forceps should be used to remove instruments.

Lid of sterilizer should be tightly closed.

Spores of anthrax and tetanus will survive this treatment.

or

2 Minutes autoclaving at 30 lbs. Pressure (136°C)

2. *Syringes and Needles.*

10 minutes in 1:500 Cetramide or 70% isopropyl alcohol tinted with gentian violet.

or

30 minutes in hot air sterilizer at 160°C

or

2 Minutes autoclaving at 30 lbs. Pressure.

Notes:

Never use same needle for injecting as was used for sampling.

On chemical sterilization rinse syringe twice with sterile water before use.

Test every needle and syringe before sterilization.

Every needle and syringe is contaminated after a gingival injection.

Sterilization in 1:500 Cetramide or isopropyl alcohol is not without risk.

3. *Handpieces.*

These are the most difficult of dental instruments to sterilize without causing damage to the working parts. Before any sterilization is attempted debris such as mucous,

tooth fillings, pumice, etc. must be removed. This can be done by dismantling the handpiece or by the method recommended by Parke (1946), namely running in a solvent solution consisting of equal parts of carbon tetrachloride and liquid paraffin for 2-3 minutes.

Hot oil sterilization, while excellent for maintaining the handpiece in good working order, has the following limitations:

1. It is only effective against moist bacterial cells;
2. It gives off unpleasant odours;
3. There is the ever-present danger of fire.
- 2 minutes in hot liquid paraffin at 250°C. (Parke's method).

or

- 10 minutes in boiling water containing 2% AC. 10 and 2% Na_2CO_3 . 10 H_2O .

(Oil after sterilizing with sterile oil).

or

- 2 Minutes autoclaving at 30 lbs. Pressure.
- (Oil after sterilizing with sterile oil).

4. Cutting Instruments.

These instruments, such as scissors, scalpels, burs, needles, chisels, present a special problem in sterilization because of the ease with which their edges may be injured. Knife edges corrode (and thus become blunt) much more easily than heavier instruments since, being thin, they cool rapidly and therefore dry slowly. Hence, a boiling water sterilizer should not be used for these instruments. Ethyl alcohol is corrosive due to oxidation to acetic acid and aldehyde whereas isopropyl alcohol is not.

- 10 minutes in 70% isopropyl tinted with gentian violet or 1:500 Cetramide.

or

- 10 minutes in pure lysol (suitable for

storage purposes).

or

- 2 minutes autoclaving at 30 lbs. pressure.

or

- 30 Minutes at 160°C. in Hot Air Sterilizer.

5. Mucous Membranes.

Firm mechanical swabbing with pledget of sterile wool followed by liberal painting of surface with Isopropyl Tincture of Iodine—I.T.I. In 1 minute the field is sterile and flora will not re-establish itself (provided the site is isolated) for 10 minutes (Newbury, unpublished).

6. Dressings.

Pack loosely in a brown paper bag sealed with staples and heat in kitchen oven for 1 hour at medium heat (160°C. or 320°F.) including a dish of water to prevent scorching.

or

- 1 hour at 160°C. in hot air sterilizer.

or

- 10 Minutes autoclaving at 30 lbs. Pressure and Drying Out Sterilization.

7. Molten Metal Sterilizer.

A special type of dry heat sterilizer, the Flaherty sterilizer, which is frequently used in dentistry is worth separate mention. We tested the sterilization time of cotton-wool tipped broaches contaminated by smearing them over the surface of an agar culture of *Staph. pyogenes*. The broaches were immersed for varying times in molten metal consisting of two parts tin and one part lead at a temperature of 250°C. (482°F.) and then cultured in fluid media. It was found that 3 seconds immersion was sufficient to destroy the surface of contaminants on the cotton wool pledgets but that 15 seconds was required for sterilization of subsurface contaminants of the wool when the tip of the swab was immersed just below the surface of the molten metal.

WHY NOT FULL DENTURES?

by F. W. CRADDOCK, B.C., Dip.Ed., D.D.S. (N.Z.), M.D.S. (Northwestern) New Zealand

Conclusion of paper in British Dental Journal, Oct. 7, 1952

If any conclusion could be said to emerge from this discussion it must be that the only hope for dentistry lies in prevention. It is becoming increasingly evident that in this country (New Zealand) except for a small and fastidious minority, natural teeth are worth saving only if the result can be achieved with less pain, less inconvenience, less time, less expense, and less difficulty for patient and dentist than is the case at present. So far as the traditional form of conservative dentistry is concerned, nearly 50 per cent of the population has already given up the struggle, and we cannot blame them. Half a century of private and public exhortation to see your dentist twice a year (for fillings) has got us nowhere.

At some time a choice will have to be made between a dental service provided almost exclusively by exodontists and prosthetists on the one hand, and oral physicians on the other. The oral physicians I would take to be professionally trained persons capable of closely following and applying preventive remedies as they are discovered by research. Much of their treatment would be in the form of advice. They would be aided by ancillary personnel to whom many of the preventive treatments and all of the restorative techniques, which might still be occasionally unavoidable, would be delegated. The relatively low cost of such an oral

health service would bring it into much closer relation to benefit received than is the case at present. Only in this way could the popularity of dentures be expected to decline from its present high level.

As for ourselves, a lifetime devoted to the never-ending filling of holes in teeth, scaling their roots or massaging their interdental papillae is a poor reward indeed for a person who has enjoyed a university education and the wide intellectual horizons which are presumed to go with it. This is tacitly admitted by those countries which have experimented in the employment of ancillary workers. Perhaps our decisions on the vexed subject of dental nurses and the future role of fully trained dentists would be wiser if we made this admission ourselves.

In human, technical, and economic resources the present cost of saving teeth for the masses is too great. In the form in which it has been practised consistently and almost unchanged during the first half of this century dentistry has, through its exodontic and prosthetic services, contributed enormously to oral health; but it has failed to achieve its supplementary objectives. It fights a losing but costly battle against the increasing forces of dental disintegration, while the public looks on with diminishing confidence in our ability to win.

ARE DENTAL FEES AS HIGH AS THEY SHOULD BE?

Editorial in Minneapolis District Dental Jour., Dec. 1952

Many dentists have expressed disappointment in fee schedules used by some of us in our private practice. Many criticisms are made because the fees are not adequate for public welfare and veterans' dental treatments. Our fees for public welfare and veterans' dentistry are checked and re-

checked by our Dental Society committees named for that purpose.

The fees in our own offices should be adequate and can be high enough without complaint from either side, if a patient is first classified into one of three groups for ability to pay.

A patient must have minimum abil-

ity, medium ability or maximum ability to pay. If a patient of minimum ability to pay is charged on an hourly basis of \$8.00 just for example, one classified as a medium should be charged on a \$12.00 hourly basis. One of maximum ability could afford to pay a fee of \$16.00 per hour or more.

Today 70 per cent of most patients

have medium ability to pay, 20 per cent have minimum and about 10 per cent have maximum ability.

Our fees have to be adequate to keep up with the increased cost of material, labour, telephone, rent, linen, office assistants, insurance, food, shelter and last but not least, TAXES!

THE PERIODONTAL POCKET

by BERYL RITCHEY, B.S., D.D.S., and BALINT ORBAN, M.D., D.D.S., Colorado Springs, Colo.

Conclusions of paper in Jour. of Periodontology, Oct. 1952

1. It is essential to the progress of periodontal therapy that every effort be directed toward developing procedures that would assure pocket elimination accompanied by an increase in the length of the clinical root. Experimentation with surgically produced pockets in animals is a valuable feature of research in periodontology, but recommendations for the clinical application of any therapeutic procedure based on such studies should be accepted with reservation unless supported by histologic evidence of routine success in practice. Animal experimentation is one thing; a precise clinical procedure with a predictable end result for the treatment of periodontal disease in man is quite another.

2. If the treatment of choice consists of the removal of calculus and planing of the root surface with or without curettage of the soft tissues above the bottom of the pocket, there may be instances in which complete pocket elimination would require gingivectomy as a supportive measure.

3. The removal of inflamed connective tissue (granulation tissue) below the bottom of the pocket is an unwar-

ranted sacrifice. No operative landmarks are available for determining the extent of the inflammatory changes. The defensive features of inflammation in the periodontium can be expected to subside following pocket elimination; the reparative features of the inflammatory response are an indispensable ally in healing and repair.

4. The bone forming the alveolar crest in periodontal disease is vital; only in rare cases would it seem logical to remove any of it.

5. Interference with the epithelial attachment involves a very real surgical risk; failure results in a shortened clinical root. The lack of dependable operative landmarks precludes the possibility of a definitive surgical technique. Recommendations for the use of this procedure should be supported by histologic evidence of routine clinical success in the treatment of periodontal disease in man.

6. Complete pocket elimination with the conservation of the existing epithelial attachment and all supporting connective tissue can be accurately and safely accomplished by gingivectomy at the bottom of the pocket.

There is no future in any job. The future lies in the man who holds the job.

Dr. George W. Crane.

*"You are the fellow who has to decide, whether to do it—or cast it aside;
Whether to strive for the goal that's afar, or be contented to stay where you are.
Take it or leave it—here's something to do; You are the fellow—it's all up to YOU."*

"A ready smile is God's gift to the receptionist."

ANNOUNCEMENTS

● **ANNUAL MEETING CANADIAN DENTAL ASSOCIATION IN COOPERATION WITH THE ANNUAL FALL CLINIC OF THE MONTREAL DENTAL CLUB** under the auspices of the College of Dental Surgeons of the Province of Quebec . . . Montreal, Quebec—October 18, 19, 20 & 21, 1953.

● **THIRTY-FIRST GENERAL MEETING OF THE INTERNATIONAL ASSOCIATION FOR DENTAL RESEARCH** March 20-22, 1953, Philadelphia, Benjamin Franklin Hotel.

● **NINTH ANNUAL MEETING OF THE NORTHWEST CONFERENCE IN DENTAL MEDICINE**, will meet in the Oak Bay Hotel, Victoria, B.C., Canada, April 19-22. Apply Dr. Gladys Underwood, Selling Bldg., Portland, Oregon.

● **WESTERN CANADA DENTAL SOCIETY**:—Jasper Park Lodge, Alberta, June 14-18. Theme—"Dentistry for the General Practitioner". The executive is going all out to make this a most interesting and colourful convention.

● **AMERICAN ACADEMY OF DENTAL MEDICINE ANNUAL MEETING**:— Hotel Shoreham in Washington, D.C., June 26-28. Theme "Nutrition". All members and interested dentists and physicians are cordially invited to attend. Apply National Secretary, Dr. William M. Greenhut, 124 East 84th Street, New York 28, N.Y.

● **75th ANNIVERSARY, UNIVERSITY OF PENNSYLVANIA**, June 10-12, 1953. Dr. LeRoy M. Ennis has been appointed chairman of the Celebration Committee.

The committee is very desirous of receiving messages from Alumni in foreign lands for this occasion. These messages will be placed in the historical record.

● **WORLD CONFERENCE ON ENDODONTICS**, University of Pennsylvania, June 21-27. Among the leading Endodontists who will participate in the Conference are Dr. B. Nygaard Ostby of Norway, Dr. W. Stewart Ross of England, Dr. Francisco Pucci of Uruguay, Dr. George Hare of Canada, as well as a number of prominent physicians. The class will be divided into groups of 15 in the afternoon, to be presided over by a group leader.

An audio-visual program and an endodontic forum have been arranged for several evenings. Tuition fee for the conference \$100. Apply to Postgraduate Courses, School of Dentistry, University of Pennsylvania, 4001 Spruce Street, Philadelphia.

● **THE FOURTH ANNUAL BERKSHIRE CONFERENCE IN PERIODONTOLOGY AND ORAL PATHOLOGY**:—Tufts College Dental School Postgraduate Division will conduct an advanced conference in Periodontology and Oral Pathology under the direction of Dr. Irving Glickman and staff, at Eastover, a resort hotel in Lenox, Massachusetts, June 14-18, 1953. The conference will consist of four days of lectures, seminars, and panel discussions regarding clinical problems by outstanding teachers and clinicians in dentistry, medicine, and their related fields.

For further information write Berkshire Conference, Tufts College Dental School, 136 Harrison Avenue, Boston 11, Mass.

● **AMERICAN DENTAL SOCIETY OF EUROPE**, Annual Meeting in Bergen, Norway. August 4-7, 1953, Hon. Secretary, F. Douglas Derrick, 140 Park Lane, London, W.1.

● The **MARITIME DENTAL CONVENTION** is to be held at Keltic Lodge, Ingonish Beach, Sept. 3-5, 1953.

● **AMERICAN DENTAL ASSOCIATION CONVENTION** at Cleveland, Ohio, September 28 to October 1.

ANNOUNCEMENTS

● 1953 will be the last opportunity for any who have failed the **DOMINION DENTAL COUNCIL OR THE DENTAL COUNCIL OF CANADA EXAMINATIONS** to re-take the portion of the examination they failed. This will be the last set of examinations held under the Dental Council of Canada as the National Examining Board will carry on henceforth.

The date for the spring examinations has not been set but they will likely commence the 18th or 25th of May. Any candidates wishing to complete their examination and receive a certificate should contact the secretary as soon as possible.

A. J. Brett, Secretary,
202 Kerr Block, Regina, Sask.

● **UNIV. OF TORONTO FACULTY OF DENTISTRY CONTINUATION COURSES** for graduates in dentistry:— **DENTAL CARIES, AETIOLOGY AND PREVENTION**, March 5-6, under direction of Dr. G. Nikiforuk with guest lecturer: **ENDODONTICS**, March 9-13, under direction Dr. G. C. Hare, with Dr. Louis I. Grossman, Univ. of Pennsylvania as guest clinician: **ORTHODONTICS**, April 13-17, under direction of Dr. Robert E. Moyers: **DENTAL ORAL SURGERY AND ANAESTHESIA**, April 27-May 1, under direction of Dr. J. H. Johnson: **PERIODONTICS**, May 4-8, under direction of Drs. H. K. Box and C. H. M. Williams. The fee for all courses will be \$75.00 except the courses on Caries which will be \$30.00.

Apply The Dean, Faculty of Dentistry, Univ. of Toronto, 230 College St., Toronto 2B, Ont.

● **UNIVERSITY OF TORONTO, FACULTY OF DENTISTRY GRADUATE COURSE IN ORTHODONTICS**: Applications will be received up to March 2 for the graduate course in Orthodontics at the Univ. of Toronto. The course commences on September 1, 1953, and continues for a period of seventeen months. Enrolment is limited to six graduates of approved dental schools. Applicants must possess satisfactory scholastic standing acceptable for enrolment for the Master of Science (Dent.) degree in the School of Graduate Studies of the Univ. of Toronto.

For further information apply:

The Dean, Faculty of Dentistry, Univ. of Toronto,
230 College Street, Toronto, Canada.

● **RESEARCH GRANTS IN DENTISTRY**:—The Associate Committee on Dental Research of the National Research Council of Canada is offering Fellowships for graduates in dentistry to provide advance training and experience in research in one of the sciences basic to dentistry. Grants-in-Aid are also available for projects related to research in dentistry.

Apply to S. J. Cook, Secretary Associate Committee on Dental Research, National Research Council, Ottawa, Canada.

● **THE NEW YORK UNIVERSITY COLLEGE OF DENTISTRY** is offering the following **POST GRADUATE COURSES TO GRADUATE STUDENTS OR PRACTISING DENTISTS**. The 1953 Calendar includes courses in the following subjects: Anatomy (head & neck); Airbrasive (given monthly); Biostatics; Ceramics (including acrylics); Crown & Bridge; Inhalation Anaesthesia; Obturators (dental); Operative Dentistry; Oral Diagnosis & Treatment Planning; Oral Surgery; Orthodontics; Pathology; Pedodontics; Periodontia; Physiology & Biophysics; Research in Physiology; Seminar in Physiology; Practice Management; Precision Attachments; Prosthetics (Full Denture Prosthetics, Partial Dentures, Immediate Dentures); Public Health Administration; Pulp Canal Therapy; Roentgenology; Tumours of the Oral Cavity; Surgical Anatomy. Apply Postgraduate Division, N.Y. Univ. College of Dentistry, 209 East 23rd Street, New York 10.

● **POSTGRADUATE COURSES IN OHIO STATE COLLEGE OF DENTISTRY**:— During the spring of 1953 courses will be given in Crown and Bridge, General Anaesthesia, Oral Pathology and Diagnosis, Airbrasive Technique, Oral Surgery, Periodontics, Partial and Full Denture Prosthesis, Anatomy of the Head and Neck, Endodontics. Apply to above college at Columbus 10, Ohio.

● To meet the needs of dentists who wish **ADVANCED TRAINING IN ORTHODONTICS**, **THE COLLEGE OF DENTISTRY, OHIO STATE UNIVERSITY**, offers three orthodontic curricula: (1) Full-time graduate study for two academic years, (2) Full-time post-graduate work for 18 months, and (3) Part-time postgraduate work for 24 months.

All correspondence relating to advanced training in orthodontics should be addressed to the College of Dentistry, Ohio State University, Columbus 10, Ohio.



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Editorial

GROUP PRACTICE

In a country where individualism and self-reliance have been the watchwords for centuries, it seems even startling that almost without knowing it the view is accepted commonly now, in the business world, that the individual has little meaning except as a member of a group. Most men have had to learn to get along in groups.

Whole new social structures have been evolved as the result of great organizations in business, in labour, in education and in government. On this continent particularly the genius of the great and small alike has turned wholeheartedly to mastering group skills and the supreme object seems to be to make the plan work better.

Every day dentists are faced with the problem of making a multitude of decisions. Should one trust his own judgment or does the group view have an inherent advantage? Of course the group has not always the advantage, for a man can be greater than the group and his lone imagination worth more than many groups.

Dentistry has scarcely more than explored the potentialities of group practice while medicine has made much progress in this direction. It has always seemed strange that there are so few partnerships among dental practitioners.

While some will say that there are disadvantages in group practice, it is this writer's opinion that they are far outweighed by the advantages. In a group we take for granted that the major branches of dental practice are divided among the members, in other words, there are specialists in each field. In one's studies and in attending conventions, special attention is given to the specialty one is following chiefly.

In routine practice, problems arise daily and sometimes several times a day when consultation is of the greatest value, not only to the patient but to the operator's peace of mind. Therefore an adequate diagnosis is more easily arrived at in a group, in fact, a group lends itself perfectly to this procedure and is an

invaluable asset. If one takes suddenly ill, or wishes to go on a trip, it is most helpful to have someone on hand to take over, men who not only have all the records and directions re treatment, but understand those records. The practice of having an office meeting once a week to talk over problems is of inestimable value. From a financial standpoint there is everything to be gained from group practice. It is easier to keep the partners uniformly busy. The overhead is less because certain equipment is shared by the group and supplies can be purchased in larger quantities. In a group there is an incentive to do one's best, knowing that one's treatment will be observed by one's partners.

From the patient's standpoint the advantages are many. He does not have to be referred to another office for roentgenograms, for surgery, for endodontic service, for periodontal treatment. He can have a complete diagnosis and receive an estimate covering the entire service. Patients appreciate this more than many dentists realize. When services by specialists in other offices are required, it means a multiplicity of fees which may add up to distressing proportions and be far more than expected. In these cases no one man has any control over the situation.

How should a group be started? Two or three men can decide to start a partnership but this plan presents many pitfalls. A marriage offers greater promise of success if preceded by a reasonably long courtship, and for this reason this writer favours the plan of a busy practitioner taking in a younger assistant on salary. If the personalities are compatible and all things seem favourable, a partnership can be formed. In any partnership the drawing up of a legal agreement is a "must." No verbal agreement can possibly meet the requirements. The younger man can eventually specialize in some field and the older man can turn over all this type of treatment to his partner. From here on the sky is the limit, if one wishes to progress. The two men can later choose a third, and the plan might well be considered which was adopted by the Mayo brothers in the early days of the great internationally famous Mayo Clinic. When these brothers were so busy they hardly knew which way to turn (yet never too busy to travel and study and attend conventions) they decided to bring in a partner—the beginning of the shrine in an obscure western village that eventually brought hope to suffering humanity throughout the civilized world. In deciding on a partner they rejected the customary procedure of employing a fledgling just out of school. What they wanted was a responsible partner, a man of experience who could carry his own weight and contribute positively to the practice. They chose a neighbouring practitioner, a man fifty years of age, a man with a large practice and a fine reputation, a man given to continuous study. From then on leaders in all fields of medicine, surgery and research were gradually added until we now have this great medical centre respected in all countries. The most amazing thing of all about the Mayo Clinic is the fact that five hundred members of this highly individualistic profession can be induced to live and work together in a small town on the edge of nowhere, and like it.

What made the Mayo Clinic possible was the brothers' attitude toward their associates. They did not merely approve their father's dictum—"No man is big enough to be independent of others"—they practised it. They considered their employees fellow workers who must travel to other centres to learn, have time for research and writing, and they were granted independence of opinion and action. Their ability would enhance the glory of the clinic.

In dentistry group practice is the ideal method of practice and the many advantages are worthy of careful study. Such a venture brought to fruition may be frail for a time but if it fails it will be because of jealousies within, not from attacks from without.

The star of group practice is rising rapidly.

M. H. G.

BOOK REVIEWS

Injuries to the Teeth of Children by Roy Gilmore Ellis, B.D.S. (Adel.), D.D.S., M. Sc. (Dent), F.D.S.R.C.S. (Eng.) Published by The Year Book Publishers Inc., Chicago, Ill. 247 Pages. Price \$4.25.

This book was first published in 1945. A second revised edition was produced in 1946 and reprinted in 1948. A third and revised edition has now been published. As will be observed this publication has been most popular.

The new edition has been revised with the assistance of several members of the staff of the Faculty of Dentistry, University of Toronto. In the preface Dean Ellis emphasizes that the recommended procedures are efficient and readily adaptable in general practice.

The content of this volume furnishes a ready reference for the practitioner in the treatment of those injuries which are so often difficult to handle satisfactorily for children.

Don W. Gullett

•

Dr. Howe and the Forsyth Infirmary.

Published by S. J. Reginald Saunders & Co. Ltd., Toronto. 184 Pages. Price \$4.75.

The story of the Forsyth Infirmary and that of Dr. Percy Howe are inseparable. This book relates the discussion between Dr. Ervin A. Johnson of Tufts College Dental School and one of the Forsyth brothers which resulted in the establishment of the infirmary at Boston. Dr. Howe, originally a small town dentist, early in his career became greatly interested in dental research. He moved to Boston in order to have greater research facilities at his disposal. His appointment as Director of the new infirmary gave him an opportunity to pursue research for which reason he accepted the position.

Herein is told the story of the initiation of the biological concept in dental research, of the emphasis upon the basic sciences in dental teaching and of a new relationship between dentistry and medicine. Dr. Howe lived a long, active life and possessed a strong personality. He lived to see his efforts in many movements come to fruition. His research work received

world-wide recognition by both the medical and dental professions.

In addition to his activities at the Forsyth Infirmary, he became an outstanding member of the Dental Faculty at Harvard University. Here he worked unceasingly for a better relationship between medicine and dentistry and had much to do with the re-organization of dental teaching at Harvard University.

His views as reported from his notebooks of forty years ago have a modern ring. Consistently he made contribution for progress in dental science. Readers will be surprised to find in many of his early statements, ideas that even now may seem new and which illustrate his advanced views. He was the recipient of many honours, justly deserved. The reader should be inspired by this well-written publication.

Don W. Gullett

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Accepted Dental Remedies includes a test of accepted products together with other information compiled to promote rational therapeutics in dentistry. 18th Edition, 208 pages. Published by the American Dental Association, 222 E. Superior Street, Chicago 11, Ill. Price \$2.00.

This book is published annually by the A.D.A. and is designed to serve as a handbook of dental therapeutics. In addition, it contains a list of therapeutic products marketed in the United States which are acceptable to the Council on Dental Therapeutics. It also includes the Council's provisions for acceptance of products, some information on standardizing agencies and on prescription writing. Statements of the Council are based upon the available scientific evidence and are subject to re-consideration at any time that new evidence becomes available.

The members of the Council and the Council Consultants are men of outstanding ability and recognized for their fine service to dentistry.

This book should be in every dental office.

M.H.G.

Men do less than they ought unless they do all that they can.—Thomas Carlyle

ROYAL CANADIAN DENTAL CORPS NEWS

Major G. MacDougall who has served a year with the 27 Canadian Field Dental Unit in Germany has replaced Major J. G. Butler, as the dental officer with No. 1 Fighter Wing, North Luffenham, England.

The following personnel of the Royal Canadian Dental Corps who have served in Germany with the 27 Canadian Field Dental Unit for the past year have returned to Canada on rotation, Captain B. J. H. Marchant, W.O. 2 W. McMichael, Sgt. T. M. Jackson and Sgt. T. Paquette.

Staff-Sergeant I. P. Hunter of No. 14 Coy. R.C.D.C., has been promoted to the rank of Lieutenant and appointed Quartermaster in No. 14 Coy., R.C.D.C. (A.F.).

The following changes of Command

have taken place in the Reserve Force Companies R.C.D.C. during the years 1951-1952:

No. 3 Fd. Coy. R.C.D.C. (R.F.) Edmonton, Alberta — Lieut.-Col. W. S. Murray succeeded Lieut.-Col. W. R. Stuart.

No. 6 Fd. Coy. R.C.D.C. (R.F.) Winnipeg, Manitoba — Lieut.-Col. J. L. Warriner for Lieut.-Col. T. J. S. Cooke.

No. 9 Fd. Coy. R.C.D.C. (R.F.) Calgary, Alberta — Lieut.-Col. C. S. Lea for Lieut.-Col. E. E. Groff.

No. 39 Base Dental Coy. R.C.D.C. (R.F.) Montreal, Quebec — Lieut.-Col. D. W. Henry for Lieut.-Col. M. L. Donigan.

CANADIAN DENTAL ASSOCIATION NEWS

FROM THE OFFICE OF THE SECRETARY

Dr. Garvin Retires as Editor:—Since its inception the Journal of the Canadian Dental Association has had but one Editor, Dr. M. H. Garvin. His record of service is such that never once did he miss the date-line for publication. In his letter of resignation he states that in giving up the editorship the timing coincides with the completion for him of 50 years in dentistry.

It is characteristic of him to place the Journal ahead of personal desire when he says, "I shall be very glad to assist the new editor, no matter who he may be, in every way possible, granting that he wishes such help, because I would feel very badly if at this time any action of mine were to injure the Journal in any way."

Over the years Harry Garvin has been an ardent supporter of every progressive advance in Canadian dentistry. He has always supported proven professional principles and had little use for temporary expedients, which delayed decisions between right and wrong.

Owing to the circumstances, as stated by Dr. Garvin, the Committee on Publications regretfully accepted his resignation in passing the following resolution:

"THAT the Committee on Publications with great regret acknowledge the receipt of the resignation of Dr. M. H. Garvin as Editor of the Journal of the Canadian Dental Association and, THAT after due consideration of the circumstances surrounding his resignation as stated by Dr. Garvin, we regretfully agree, therefore

BE IT RESOLVED that the resignation of the Editor be acknowledged and FURTHER that recommendation be made to the Executive that Dr. Garvin's long service in his capacity as Editor be suitably recognized."

New Publication, "Your Child and Mine":—An attractive booklet entitled "Your Child and Mine" with a sub-title "The Story of Dental Health" is now available. This publication has been prepared by The Dental Public Health Committee of the Ontario Dental Association with the assistance of an editorial board made up of prominent members of the dental profession together with representatives from the nutrition health field and also including public school inspectors. The subject matter has been thoroughly checked as to fact and method of presentation from the educational standpoint. The book is profusely illustrated with photographs and diagrams.

The subjects covered are:

The First 2½ Years.
The Child Goes to the Dentist.
The Permanent Teeth Arrive.
Nutrition and Dental Health.
Tooth Brushing.
Occlusion and Malocclusion.

In addition are many sub-headings all of which are clearly illustrated.

This publication is ideal for the waiting room of the dentist in that it is educational to the patient and answers a great proportion of the patient's questions. It is also valuable to all teachers of dental health.

Copies of this book may be secured at one dollar (\$1.00) per copy by writing:
Canadian Dental Association,
234 St. George St.,
Toronto.

1953 Session Federation Dentaire Internationale:—The Annual Session of the International Dental Federation will be held in Oslo, Norway, July 26 to August 1, 1953.

C.D.A. Executive Meeting:—The Executive will meet beginning Thursday, February 12 at C.D.A. Headquarters, Toronto.

Issues of Journal in Short Supply:—The demand for certain back issues of the Journal of the Canadian Dental Association has exhausted the supply. The receipt of the issues listed below would be appreciated from members who have no further use for them. Address to: Canadian Dental Association, 234 St. George St., Toronto.

1951—September Issue, Vol. 17, No. 9

—November Issue, Vol. 17, No. 11

1952—January Issue, Vol. 18, No. 1

—February Issue, Vol. 18, No. 2

—April Issue, Vol. 18, No. 4

Additions to the Library

ARCHER, W. H.: A manual of oral surgery. 1952. 643 pp. illus.

BENN, R. E.: Hypnotism and mesmerism. Specialist dentists' course. 1950. 69 pp.

BROCK, A. J.: Greek medicine. Translated and annotated by Arthur J. Brock. Edited by Ernest Baker, 1929. 256 pp.

CONYBEARE, J., and MAN, W. N.: Textbook of medicine by various authors. 1952. 912 pp. illus.

DOWDEN, J. W.: Clinical surgery. An introduction for junior students, 1928. 68 pp.

GREAT BRITAIN: Directory and Handbook of the Scientific Instrument Manufacturer Association of Great Britain Limited. 1952. 251 pp. illus.

GREIG, D. M.: Clinical observations on the surgical pathology of bone. 1931. 248 pp. illus.

HARVEY, W. F., DAWSON, E. K., and INNES, J. R. M.: Debatable tumours in human and animal pathology. 1940. 124 pp. illus.

HENSCHEN, F.: Morgagni's syndrome. Heperostosis frontalis interna, virilismus, obesitas. 1949. 172 pp. illus.

LUCAS, G. H. W.: The symptoms and treatment of acute poisoning. 1952. 308 pp. illus.

MAXIMOW, A. A., and BLOOM, W.: A textbook of histology. 1952. 616 pp. illus.

MAYO, C. H., and MAYO, M. J.: Aphorisms of Dr. C. H. Mayo 1865-1939, and Dr. W. J. Mayo, collected by F. A. Willius. 1929. 109 pp.

NASSET, E. S.: Food and you. 1951. 92 pp.

ORRIN, H. C.: Fascial grafting in principle practice. An illustrated manual of procedure and technique. 1928. 92 pp. illus.

THOMA, K. H.: Oral surgery. 2nd ed. 1952. Vol. 1-11, 1-865.168 pp. illus.

TURNER, A. L., and REYNOLDS, F. E.: Intracranial pyogenic diseases. A pathological and clinical study of the pathways of infection from the face, the nasal and paranasal air-cavities. 271 pp. illus. (1931).

WALLACE, J. S.: The newer knowledge in hygiene in diet. 1952. 264 pp.

WIDDOWSON, T. W.: Special or dental anatomy and physiology and dental histology. Human and comparative. 8th ed. 1952. Vol. 1. 481 pp. illus.

If you can't win fairly, don't win.—Dean Cromwell.

No one has a right to consume happiness without producing it.—Helen Keller.

"Tomorrow is going to be a busy day for the fellow who is always putting off those unpleasant duties."

The man of 80 years has one great asset that a younger man cannot have and this is the mind's greatest asset—Wisdom.—F. B. Bowman, M.D., F.R.C.P.

NEWS FROM THE PROVINCES

ALBERTA

The **Calgary Dental Society** at an emergency meeting held recently received the final report of the Insurance Committee. This committee was appointed to investigate fully the specimen contracts of the Canadian Dental Association's Pension Trust Fund. Under the chairmanship of Dr. James Zimmerman, President-elect of the Alberta Dental Association, the committee thoroughly assessed every possible aspect of the contracts and returned an entirely complimentary report concerning the C. D. A. plan.

Calgary Dental Corps Reserve Unit wins Moore Trophy. Unit Dinner of No. 9 Company R.C.D.C. (R.F.).

Following a formal mess dinner Lieut.-Col. E. E. Groff, former C.O. of 9 Coy., presented a swaged copper R.C.D.C. Crest to Lieut.-Col. C. S. Lea, M.B.E., C.O. of 9 Coy., and through Lieut.-Col. Lea to the Unit. Lieut.-Col. Lea then presented the beautiful plaque to the Garrison Sgt.'s Mess. Major F. Burt-Johns, Chief Security Officer of C. P. A. fabricated the copper plaque and as a token of appreciation for this artistry, Lieut.-Col. Groff presented him with an engraved silver cigarette case. Col. M. L. DeRome, O.B.E., E.D., Commander of H.Q. Calgary, presented the Efficiency Decoration Medal to Major J. M. Warren. Col. DeRome then proposed a toast to the Unit.

Col. W. E. Addinell, Edmonton A.D. D.S. (R.F.) Western Command then presented the Moore Trophy, emblematic of the years' most efficient Dental Coy. in Canada to Lieut.-Col. Lea. In so doing Col. Addinell paid tribute to the unit for their victory.

Other guests present were Lieut.-Col. F. J. MacLean, C. D. Command Dental Officer, Western Command and C. O. No. 11 Coy., R.C.D.C.C.A. (A.F.).

Lieut.-Col. W. S. Murray, C.O. No. 3 Coy., R.C.D.C. (R.F.) representing the former Moore Trophy winners.

Major E. M. Scott, R.C. A. P. C.

Sgt. Major Marshall, President of Garrison Sgts' Mess.

Following the presentation of the Moore Trophy, the trophy was suitably received in the unit. After an evening of entertainment the members of the unit gave three cheers and a sincere tiger for their esteemed C.O. — Lieut.-Col. "Spenny" Lea.

The **Central Alberta Dental Society** held a Ladies' night recently. The eve-

ning was so successful that the society plans to make this enjoyable evening an annual event. Following a banquet, Dr. E. Dodd of Red Deer proposed a toast to the ladies. The Martin School of Dancing was the feature of the evening. Those present then danced and played bingo. Dr. Murray Boyce of Rocky Mountain House was Chairman.

The **Edmonton District Dental Society** have been neglecting their society meetings devoting their efforts almost entirely to the Western Canada Dental Society Convention to be held in Jasper, June 14-18, 1953. Two big hurdles have been overcome: the new Jasper Lodge will be ready for the Convention and Dr. Floyd D. Ostrander, Dr. Paul C. Salisbury and Col. A. H. Schmidt will be essayists. All in all we can expect one of our best conventions in June of '53.

University of Alberta, Faculty of Dentistry:—On Friday morning, October 10, the faculty was honored by the visit of two illustrious members of our profession, namely, Dr. G. Ratté, President, and Dr. D. Gullett, Secretary, of the Canadian Dental Association.

These men addressed the student body in Convocation Hall. They set forth the privileges we, as dentists and future dentists, enjoy by belonging to the profession. They warned that these should not be abused, but that the future of dentistry should be enhanced by our conduct.

Dr. Ratté and Dr. Gullett then visited the various clinics and laboratories and observed their operation.

On the evening of November 19, 1952, Dr. J. D. McLean, of the faculty, delivered a talk over Radio Station CKUA on the program, "Your University." In his address Dr. McLean presented the history of dentistry from the earliest days. He told of the development of our own school from the struggle of the early days up to the present very fine set-up of clinics and laboratories.

To enlarge on the subject Dr. McLean interviewed one of the senior students, Mr. M. P. Quinn. In this interview it was brought out that this student was a World War II veteran. The requirements for entry were mentioned. The student gave his view on the highlights of the course and what should be understood by any prospective student regarding required high school and pre-dental subjects.

C. G. Duke

SASKATCHEWAN

Presents Oil Painting:—A large oil painting was presented to St. Andrew's United Church recently by Dr. Vernier Rondeau of Rouleau, Sask. A talk was also given, when oil paintings were displayed, also specimens of Natural History.

The new flag of "Self-Conquest" which was created by the doctor, was displayed for the first time.

Among the paintings was one of Queen Elizabeth, Lincoln, Carrie Jacobs Bond and Dr. Grenfell.

He also showed an oil painting of "Lassie Come Home" and Vida, which was a lead dog with Scott's expedition.

ONTARIO

Newly elected members of the **Board of Directors of the Royal College of Dental Surgeons of Ontario** are as follows.

- Dist. 1: Dr. C. M. Purcell, Pembroke
- Dist. 2: Dr. W. J. Langmaid, Oshawa
- Dist. 3: Dr. M. V. J. Keenan, Sudbury
- Dist. 4: Dr. R. P. Lowery, Toronto
- Dist. 5: Dr. M. C. G. Bebee, Owen Sound
- Dist. 6: Dr. F. J. Furlong, Windsor
- Dist. 7: Dr. R. O. Winn, Kitchener
- Dist. 8: Dr. H. M. Morrow, Hamilton

Faculty of Dentistry:—

Dr. R. J. Godfrey, Toronto

Extramural Lectures given by members of the **Faculty of Dentistry Staff, Toronto** are as follows: Dr. F. T. Pearson at Brant County Dental Society; Dr. R. E. Moyers at Inter County Dental Society, Kitchener; Dr. Gordon Nikiforuk at Kent County Dental Society, Chatham and Dr. W. J. Ross at Kingston and District Dental Society, Kingston.

Ontario Dentists' Curling Association held its annual bonspiel at Kitchener-Waterloo Granite Club on December 10 last. The rink winning first prize and the Charles McKenna Trophy was skipped by Dr. Cliff Mason from the Hamilton Thistle Curling Club. The winners of the second prize were skipped by Dr. Jack Trelford of the Toronto Granite Club.

Dr. Carl Moyle and his rinkmates from the Hamilton Thistle Club won the high score for a single game and Dr. Roy Winn and teammates of the host club at Kitchener won the "Game Cock" prizes.

There were 20 rinks in competition for the day with players representing London, St. Thomas, Woodstock, Walkerton, Wingham, Owen Sound, Bracebridge,

Collingwood, Orillia, Coldwater, Beaverton, Brampton, Orangeville, Markdale, Welland, Guelph, Galt, Ayr, Hespeler, Hamilton and Toronto.

Members of the prize winning rinks were:

1. Drs. Bill Hambly, Dave Shultz, Art. Poag, and Cliff Mason (Skip).
2. Drs. Tom Marshall, "Mac" Sheldon, Bert Diprose and Jack Trelford (Skip).
3. Drs. Ralph Connor, Lorne Janes, Holly Dwyer, and Carl Moyle (Skip).
4. Drs. J. Coker, S. C. Shantz, Jim Boyd, and Roy Winn (Skip).

The Bonspiel closed with a grand dinner and a few good stories from President Dr. Harold Campbell and by the genial enthusiastic director Mr. Charles McKenna.

Toronto:—The **Ladies' Dental Auxiliary** held a social evening, for members of the Auxiliary and of the Academy of Dentistry, at the War Amputation Club, January 22.

Dr. R. G. Ellis, Dean of the Faculty of Dentistry, showed his pictures, "Time out in Singapore." Refreshments were served.

Mrs. Nell Downton

The guest lecturer before the **Royal Canadian Institute** in Convocation Hall, Toronto, on January 10 was **Dr. Gordon Nikiforuk of the Faculty of Dentistry**. The speaker chose as his subject "**Dentistry's Dilemma**," implying a fact that our generation is suffering more today from dental defects than ever before.

Dr. Nikiforuk traced the progress of dental science indicating that in the early days the dentist was concerned mostly with the relief of pain. In this connection the discovery of general anaesthesia was a great step forward. Gradually restorative dental treatment took form with a professional tendency to develop into a craft. Then the x-ray was discovered and following this the so-called focal infection era. And thence now to a realization that the problem of dental disease cannot be solved by treatment alone but must be attacked through preventive means.

The speaker suggested three major types of dental disease—Caries, Periodontal and Malocclusion.

In the first instance the treatment of dental disease presents a tremendous economic problem. Forty-eight million dollars are spent annually on dental services which represents one dollar in every six spent on professional health care and hospitalization. Moreover only 30% of Canadian people subscribe to regular dental care, the other 70% attend the dentist spasmodically.

Dr. Nikiforuk discussed briefly the incidence of gum diseases and malocclusion

but the thesis of his remarks had to do with Dental Caries.

A public school survey revealed the following figures: Among two year old children, 2 in every 10 had cavities in their teeth; at age six, 9 children in 10 had Caries. Among all ages in public school 3 in 10 had had no previous dental care; 2 in 10 had malocclusion and there was an average of 4 cavities per child. Using a graph the speaker showed the tremendous upsurge in Caries incidence in the 19th and 20th centuries.

The factors having to do with Dental Caries are: — THE TOOTH ITSELF, BACTERIA, and DIET—"Undoubtedly some teeth are more resistant to decay than others but Caries cannot occur without bacteria," stated the speaker. In regard to diet the physical texture of our food is important as is the curtailment of highly refined fermentable carbohydrates.

How shall we prevent tooth decay? Change from refined foods to foods of tougher texture. Reduce fermentable carbohydrate intake e.g. sugar; instead of sweet dessert, an apple or an orange, even a raw carrot may be substituted. Tooth brushing or at least a mouth rinse should follow the intake of food immediately.

Sodium fluoride, one part per million in the communal water supply will reduce the community Caries rate 40% - 60%; penicillin in tooth powders may reduce Caries 40% - 50% but was not recommended because of the tendency of bacteria to accommodate themselves to it. Ammoniated and chlorophyll dentifrices were humorously dismissed as having no more value than any other dentifrices.

The speaker concluded expressing the belief that within a decade or so RESEARCH would provide an effective method of preventing dental caries.

In tendering the appreciation of the members of the institute to Dr. Nikiforuk, Dr. Harry Ebbs, Physician-in-Chief of the Hospital for Sick Children, commented "This has been one of the key talks in a new era in Dentistry."

Wanted—The Library of the Faculty of Dentistry, University of Toronto, is most desirous to obtain copies of *Torontonensis* for the years 1921, 1948 and 1949. One of these volumes was lost through theft and one is in a damaged condition through wilful vandalism.

We would appreciate receiving information as to where these volumes may be available and are willing to pay current prices for them in order to complete our collection. Any information relative to these volumes would be gratefully received by the Librarian, Dr. J. H. John-

son, Faculty of Dentistry, 230 College Street.

On January 12 and 13, the **Faculty of Dentistry, University of Toronto**, held a two-day clinic that was attended by **66 members of the executives of 37 of the 38 Dental Societies in Ontario**. The program was planned and carried out by members of the staff and included a time-lapse movie film "Causes of Dental Amalgam Failure" and a film on endodontics. This was followed by a demonstration of "Air-Dent in Operative Procedures" carried out by Drs. P. G. Anderson, W. J. Ross and J. D. Purves. The third clinic was a consideration of "Some of Today's Periodontal Problems," given by Dr. W. G. McIntosh. The fourth clinic was given by Dr. J. H. Johnson on "The Classification and Surgical Treatment of Dental Cysts."

The program began with a welcome and address by Dean R. G. Ellis, following which there was a conducted tour through the building to acquaint the group with all the recent doings and changes that have taken place in the last few years. Many were amazed at the transformation, especially on the top floor where the Division of Dental Research has established its new quarters. In the various departments of the Research Division the guests were shown "live" demonstrations of the work being conducted, and were given brief descriptions of the nature and purpose of the various individual projects that constitute the Department's program as a whole.

In the evening the group attended a dinner at the Granite Club where the guest speaker was Dr. Harry J. Ebbs, Resident Physician-in Chief of the Hospital for Sick Children. He spoke on "The Spirit of Research" and his genuine conviction and whole-hearted enthusiasm was quickly transferred to his appreciative audience.

The other guests included Mr. George Black and Mr. M. Kelly representing the O'Keefe Foundation who have been so generous with their guidance and donations towards the development of the new Division of Dental Research's facilities and present campaign. Dr. Sidney Smith, President of the University of Toronto, gave approval and blessing to the program. Dr. C. H. M. Williams reviewed the present position of Dentistry from the point of view of cost and service to the public, and showed that the road to progress lay through further research established on a firm, long-term footing. He introduced the Dental Research Fund Campaign for \$300,000 and asked that all local dental societies in

Ontario set up their own campaign committees to canvass their own districts during the campaign period from March 1 to March 31, 1953. These plans were enthusiastically endorsed by the group.

Dr. W. G. McIntosh, Associate Professor of Periodontology, Faculty of Dentistry, University of Toronto, addressed the **London and District Dental Society** at the December meeting held in Hotel London on December 13. Dr. McIntosh spoke on "General Health Status and its Relationship to the Oral Tissues," in which he discussed the relative risks involved in undertaking dental treatment for patients suffering from various systemic conditions, as well as the oral manifestations of these diseases and the probable end result of treatment. His talk was particularly well suited for the general practitioner who encounters these patients in his daily practice and may entertain certain doubts as to the wisdom of undertaking various dental procedures for them. Dr. McIntosh also spoke briefly about the functions of the new Division of Dental Research in the Faculty and appealed for the support of every practitioner in the forthcoming financial support campaign.

The meeting was chaired by the President, Dr. J. B. Taylor, and was attended by more than 60 dentists of London and District.

J. A. Guest

QUEBEC

Oysters pretty well filled the agenda and overflowed onto the floor at the December 15 meeting of the **Montreal Dental Club**, held in the RCMC-RCDC mess.

The oyster party was an innovation this year and those present agreed with President Martin that it should be an annual event. Although there was no program for the evening, the oysters provoked some interesting technical discussion.

The exodontists explained the use of leverage to those who shelled their own while those in the operative field engaged in a more academic discussion concerning the potentialities of air abrasive in opening the bivalves. Others in the research field explored the possibilities of lowering the pH of the water in the oyster beds and at the same time instilling *Lactobacillus acidophilus* so that as the oysters grew to maturity the hard shell would decay away.

All agreed that there was still much to be worked out but that the subject presented unlimited possibilities.

At the close of the meeting elections were held with the following being welcomed to the club: R. A. Lefebvre, G.

Brabant, W. Richards, R. Nadeau, D. Munroe, A. H. Craven, G. Johnson.

A. D. Armstrong

Dr. Gerald Franklin addressed the **Mount Royal Dental Society** on December 9 on the "Prevention and Interception of Malocclusion." This paper, which was the inaugural George W. Grieve Memorial Lecture, was presented before the Canadian Dental Association at Ottawa in 1951.

Dr. Franklin aptly presented his subject and showed how malocclusion of teeth is not of simple aetiology but rather a result of disturbance in growth relationships. The effects of heredity and the role of deciduous teeth were pointed out. A discussion on space maintenance was given.

Interesting cases were presented which illustrated the effects of supernumerary teeth on occlusion and various correction measures for crossbites were explained. A discussion of habits detrimental to occlusion concluded the paper.

During a question period the speaker voiced the opinion that any mental stress caused by discouraging a child to give up a sucking or biting habit would be no worse than the adverse psychological effects of a disfiguring malocclusion.

The speaker was thanked by Dr. B. L. Hyams who offered a suggestion as to the use of a rubber eraser instead of a tongue depressor for moving malposed anteriors from linguoversion to a normal labial position.

J. Mendel

NOVA SCOTIA

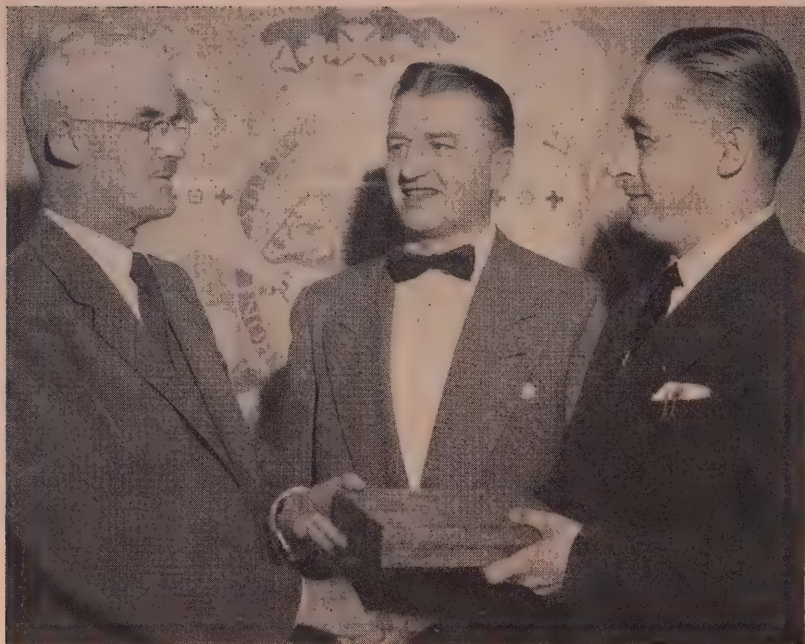
Presentation to Dr. W. W. Woodbury:—The Faculty of Dentistry and teaching associates in the other faculties at Dalhousie University held a dinner and presentation at the Lord Nelson Hotel on December 15, to do honour to Dr. W. W. Woodbury, former Dean of Dalhousie Dental School and head of the Orthodontic Department.

Dr. W. W. Woodbury, now Professor Emeritus, retired as Dean in 1948 and as head of the Orthodontic Department in 1952.

The chairman of the meeting was Dr. J. P. McGuigan and Dr. P. S. Christie presented Dr. Woodbury with a desk pen set on behalf of those present and read the following address:

It is our privilege and our pleasure this evening to do honour to a recently retired member of the Faculty of Dentistry, an ex-dean of that Faculty and now a Professor Emeritus.

He has been known to all here for varying lengths of time and in various capacities—despite these differing relationships I am sure we all agree that he has been a fine citizen, an able teach-



PRESENTATION TO W. W. WOODBURY, B.Sc., D.D.S., HALIFAX, NOVA SCOTIA

Left to Right—Dr. W. W. Woodbury, Dr. J. P. McGuigan, Dr. P. S. Christie

er and administrator and a leader of his profession.

His activities as citizen have been many—notably, he has served as elder in St. Andrew's Church and for many years he conducted a boys' class in the Sunday School; he has been President of both the Y.M.C.A. and the School for the Blind. He served as a Captain in the Canadian Army Dental Corps during the First World War.

His association with the Faculty of Dentistry has extended over a period of forty-four years—for forty-two of which he was Professor of Orthodontics and for twelve of which, 1935-47 he was Dean of the Faculty. He has recently been appointed Professor Emeritus.

Since 1920 he has conducted a private practice exclusively devoted to orthodontics. Aside from the exceptionally high plane on which he has conducted that practice he has been the only orthodontist in this part of the country, which has made his services doubly appreciated.

In these capacities his associates and students have always found him free with both his time and his energy in their behalf. Problems brought to him

were made his own, whether large or small.

His activities, however, have not been confined to the local field. His interest in his profession and in dental education has been broad. For the term 1940-42 he was President of the Canadian Dental Association at a time when the impact of the war made the duties of that office heavier than they had been before. During his time as Dean he took an active part in the meetings of the American Association of Dental Schools. He has been for many years a member of the American Association of Orthodontists and took part in the early meetings of that Association when it was a comparative infant—a period to which he looks back with considerable nostalgia. He has presented to these organizations and had published a number of papers which are distinguished by the manner in which they get to the heart of the matter.

It would be easy to indulge in superlatives, which would be quite accurate in this instance, or to give details of our guest's activities, or to quote from his writings to demonstrate his style of thought, but he is well known to be a

modest man and, while such a procedure would round out the picture, I am afraid it would embarrass him unduly.

Dr. Woodbury is surely aware that he is not without honour in his own country, yet it is most fitting that we should

have gathered in this way to give him concrete evidence of the fact.

Dr. Woodbury, it is with the greatest pleasure that I, on behalf of your colleagues, present you with this token of our respect, our esteem and our affection

BRITISH COMMONWEALTH NEWS

GREAT BRITAIN

Future of Local Authority Health Services:—It does not require a very vivid imagination to foresee that during the next few years the British health services are likely to be the subject of searching investigation. No country can afford to go on spending indefinitely one-third of its government's revenue on social services, and the economists have pointed out the dangers . . . When the day of reckoning comes all branches of medicine will be concerned, and indeed from the financial point of view doctors are peculiarly vulnerable. Some signs of public discontent are already visible. The announcement of the Danckwerts award to general practitioners was swallowed by the public in glum silence. The methods of payment of merit awards to consultants are also open to attack, for these mark a departure from the constitutional principle that the expenditure of public funds must be public . . . The increases in salaries of medical officers of health have forced the local authorities, much against their will, to raise the salaries of the other chief officers; and, lastly, the disparity between the stipends of clinical professors and the other teachers in the universities has resulted in controversy and dissatisfaction. The position is a disturbing one, with few precedents on which to rely for guidance. Hasty action by political leaders who

feel that they are voicing public demands for full value for money might well result in a rigidly controlled or a full-time salaried service. The only experience on which we can draw is that of the local authority health services.—Br. Med. J. per Public Health Economics.

Fewer Britons Seek Dental Care for Fee:—Since the British government imposed a charge of one pound (about \$2.80) for dental treatment, persons who were accustomed to free service have not been seeking dental care, notes a recent issue of the British publication, *The Medical Press*.

Observing that the first three or four years of the National Health Service had been marked by a rush of dental patients, the editorial comments that the backlog had been dwindling and that many dentists were looking forward to doing conservative treatment. Since the charge was levied last summer, however, patients who formerly came for free treatment have not been visiting their dentists, the publication states.—*Jour. A.D.A.*

A Committee was appointed by the **Scottish Health Services Council** to consider the development of preventive dental services. The Report favours the adoption of the New Zealand scheme which appears to be a matter of deep controversy.

GENERAL NEWS

U.S.A. President's Commission Reports:—Based upon a one-year study, the final report of the President's Commission on Health Needs of the Nation firmly advocates increasing the number of dentists, greater financial support of dental research and extension of communal water fluoridation. The report was submitted to President Truman on December 18.

The expected supply of 85,000 dentists in 1960 could probably make good use of 150,000 dental assistants and 20,000 dental hygienists. Only about 6,000 dental hygienists and 55,000 dental assistants are working today, but since the training period for these workers is relatively short, the output could be stepped up appreciably.

Cigarette Smoking and Cancer of the Lung:—Evarts A. Graham, Ernest L. Wynder, and Adele B. Croninger of Washington University School of Medicine, Memorial Center, New York, and Washington University, report on cigarette smoking as follows:

"Primary cancer of the lung has increased in frequency so much in the past 40 years that it is now the most common internal cancer in the male sex. Statistical studies, published by the authors in 1950, and a little later in England by Doll and Hill, are in remarkable agreement, showing that in cases of cancer of the lung there is almost always a history of excessive cigarette smoking for a period of at least 20 years and that it is rare to find a case in a nonsmoker. Also,

we have obtained direct evidence that tar obtained from cigarette smoke will produce cancer experimentally when painted on the skin of mice over a period of about a year. Demonstrations of the experimentally produced cancers are presented."—*Science*.

Indiana Dentist, 89, Plans To Continue Practice:—An 89-year-old dentist who practises in Bedford, Ind., has registered his claim to the title of "oldest practising dentist in the United States." He is John G. Hogan, a graduate of Kansas City Dental School, who has been in private practice since 1886—*Jour. A.D.A.*, Nov. 1952.

Newest Claimant to Title of "Oldest Dentist" is 91:—A 91 year old dentist, who is associated with his son and grandson in dental practice in Paterson, N.J., has entered his claim to the title of "oldest practicing dentist in the United States." He is William H. Pruden.

Fire Equipment:—The Ontario Department of Lands and Forests has 438 miles of hose, enough to reach from Toronto to North Bay and almost back again. Concentrated in one place the fleet of red and white canoes used by the rangers and conservation officers, would reach more than three miles.—*Dept. of Lands and Forests*.

Criticizes Flamboyant Claims for Chlorophyll Dentifrices:—In a symposium on ammoniated and chlorophyll dentifrices, presented during the Greater New York Dental meeting, Thomas J. Hill of Cleveland criticized the claims made for chlorophyll and ammoniated dentifrices by flamboyant advertisements. Dr. Hill, chairman of the American Dental Association's Council on Dental Therapeutics, stressed that results of scientific tests do not substantiate the advertising copy and declared that no conclusive evidence exists that chlorophyll or ammoniated dentifrices help to fight tooth decay.

—*Jour. A.D.A.*

Dr. Painless Parker dies at 80 in San Francisco. He was a native of New Brunswick. In 1915 he had his name changed from Edgar Randolph Parker to Painless Parker. In his 60 years in what he called "the noble tooth-plumbing profession" Dr. Parker made millions but lost much of it in other ventures.

His first office was in a barber shop at St. Martins and he converted his mother's sewing machine into a lathe. For his first three months his gross receipts were 75 cents so he decided to mix showmanship with dentistry. Dr. Parker

hired a brightly painted wagon and a cornet and offered \$5.00 to anyone who suffered any pain when he extracted. It is stated that during extractions the cornet was blown so hard that one could not hear the cries of the patient. In 1894 he assembled a lively show and made a tour of eastern Canada, picking up as much as \$350.00 a day.

He went to California and there expanded until at one stage he had 28 dental offices, in California, Oregon and Washington, employing 248 persons, 78 of them dentists. For a time he had an entire circus which toured the area advertising the business.—*Saint John Telegraph*.

Fluoridation for 1,180,000 Inaugurated in Baltimore:—In Baltimore, the largest fluoridation program in the United States was inaugurated November 26. H. B. McCauley, dental director of the Baltimore City Health Department, estimates that 1,180,000 persons in the city and the three surrounding counties will receive the fluoridated water. The program was inaugurated after a two-year period of preparation and a series of attempts to prevent the action.—*Jour. of A.D.A.*

More than 3,000 dentists attended the colour television clinics which were presented on the opening day of the **Greater New York Dental Meeting**.

A total of 15,473 attended the December 8-12 meeting, which was the 28th annual seminar sponsored by the First and Second District Dental Societies of the State of New York.

Academy Forced to Promote Post-graduate Dental Study:—The Academy of General Dentistry will hold its first general meeting at 5 p.m. February 9 at the Conrad Hilton Hotel, Chicago. The primary purposes of the newly-formed organization are:

1. To stimulate interest in post-graduate study by the dentists in general practice.
2. To encourage better attendance at the various dental society meetings, especially branch meetings.
3. To help provide for and arrange post-graduate courses for the general practitioner, in cooperation with dental schools and societies.
4. To strive to maintain high standards in dentistry by the men in general practice.

Further information may be obtained by writing to A. L. Knab, Secretary, 8500 Stony Island Avenue, Chicago 17.

Effect of TV on Children's Health:—It is surprising to learn that very little research has been done on the medical

and psychological impact of television crime programs on children. Studies show many undesirable effects on the health and minds of children resulting from horror movies and radio crimes, and it can be assumed the same is true of TV.

Physicians agree that television, movies and radio in themselves do no great harm, but the manner in which these mediums bring crime before the eyes and ears of American children shows a complete disregard for mental, physical and social consequences. The TV industry would be wise to sponsor research on the effect of television on mind and body, and to avoid televising programs that might be dangerous to the health of the nation's children. — "Influence of TV Crime Programs on Children's Health." The Journal of the American Medical Association, December 2-5, 1952, per F. Rev. Chic. D. Soc.

New Fee Basis Studied:—The Baltimore City Medical Society is studying a plan under which a patient's fees would be based on his income and the number of his dependents. The medical society has named a committee to study the proposal under which doctors would scale their fees in accordance with a patient's income. The plan's announced aims are to cut the cost of medical care to lower income groups and head off any possibility of so-called socialized medicine.—Washington Post.

Here is a **Prescription for Easy, Sensible Weight Reduction.** Miss Margaret E. Smith, Ph.B., M.Sc., nutrition director of the Health League of Canada, believes that simply by eating the essential, natural foods and abstaining from the non-

essential, a notable slimming will occur within a period of three months—and the wise eater will feel much better able to cope with the world.

Here is the simple plan: Write down the names of the foods which contain animal protein—milk, Canadian cheese, cottage cheese, buttermilk, eggs, lean meat, lean fish—and use regular amounts of these. Write down the following non-essential foods and shun them—cream, bacon, sugar, jam, corn syrup, all chocolate or cocoa used in drinks, desserts and cakes, carbonated water of all kinds, candies, pies with a top crust, ice cream and rich cake, particularly when it is roofed with whipped cream. — Health League of Canada.

New Comprehensive Health Plan in Israel:—A pioneer and comprehensive health plan that is termed a "revolutionary project" will be introduced in a small Israeli town, it is reported. The plan eventually will embrace the entire country to help solve the fledgling nation's taxing medical and emotional needs of her record influx of immigrants.

The plan, free of charge, will provide comprehensive preventive, diagnostic and curative physical and mental health services for entire communities, with emphasis on the family as a unit. Included in the program will be the dissemination of the latest information about health and sanitation, the breaking down of cultural or environmental taboos interfering with sound or emotional health, adequate recreation facilities for children and adults, vaccination and immunization, treatment of existing physical ailments including dental and eye care, and the treatment of emotional tension within the family group.—N.Y. Times.

IN MEMORIAM

Donald Brendan Macneil of Halifax, Nova Scotia, aged 30, died December 17. He was graduated in dentistry from Dalhousie University in 1948.

In 1949 he was appointed to the staff of the Dalhousie Public Health Clinic. In 1951 he became a member of the staff of the Victoria General Hospital. In the same year he was appointed to the staff of the Dalhousie Dental School in the department of Exodontia.

He was a member of the Canadian Army Dental Corps Reserve Force.

Dr. Macneil is survived by his widow, one son, his mother and two brothers.

Edward E. Rogers of Vancouver, B.C., died December 4. He was Vice-President and Western Manager of Ash-Temple Co. Ltd.

He was an active Rotarian and a member of the Capilano Golf Club, and a mason.

Mr. Rogers is survived by his widow, a daughter, a sister and two grandchildren.

Rowe Smith of Texarkana, Ark., Chairman of the American Dental Association's section on periodontics, died recently at the age of 54.

IN MEMORIAM

George S. Fowler of Teeswater, Ontario, died at the age of 89. He was graduated from the College of Dentistry of the Royal College of Dental Surgeons of Ontario in 1893 and conducted his dental practice at Teeswater.

He was elected an honorary member of the Royal College of Dental Surgeons in 1943.

Dr. Fowler was prominent in fraternal circles for many years; he was a member of the Masonic Order, the Odd Fellows and the Sons of Scotland. He had been Chairman of the local Hydro Commission and of the School Board. He was a member of South Bruce Conservative Association and in his earlier years was active in the militia holding the rank of Lieutenant in No. 8 Company 32 regiment.

Albert Ernest Mullin of Sarnia, Ontario, died on December 27 at the age of 85. He was graduated from the College of Dentistry of the Royal College of Dental Surgeons of Ontario in 1895. He practised in Sarnia.

Dr. Mullin was elected an honorary member of the Royal College of Dental Surgeons in 1945.

Dr. Mullin was put on the Corps Reserve in 1931 having had 35 years continuous service in the militia as an officer. He enlisted in 1934. He was on active service in 1915 and attached to Kirkdale Military Hospital overseas. He was president of the Sarnia Branch of the Canadian Legion.

He is survived by his widow and one son.

Charles Oswald Lennox of New Toronto died on December 7 at the age of 51. He was graduated from the Faculty of Dentistry, University of Toronto in 1926. He practised in New Toronto.

Dr. Lennox was active in public service and fraternal circles. He was attending dentist in New Toronto public schools; he was a member of New Toronto School Board from 1928 to 1934; he was Deputy Reeve of New Toronto in 1935 and a member of the New Toronto Library Board from 1937 to 1940.

He was a member of Lakeshore Lions Club and its president in 1934; he was deputy District Governor the following year. He was a member of Odd Fellows serving as Noble Grand Master in 1933. He was Master of his Masonic Lodge in 1941.

He was a member of Century United Church.

Dr. Lennox is survived by his widow and one daughter.

Alva Etherton Heacock of South Edmonton, Alberta, aged 81, died December 22. He was graduated from the Dental School of the Royal College of Dental Surgeons of Ontario in 1903. For 15 years he was with the provincial government clinics. He retired in 1939.

He was a member of Metropolitan United Church.

Dr. Heacock is survived by his widow, five daughters and one sister.

DIRECTORY

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Désordres de l'articulation temporomandibulaire et occlusion

par GEORGES PELLETIER, D.D.S., Montréal

Pour bien comprendre la pathologie de l'articulation temporomandibulaire, il est essentiel de considérer l'appareil masticatoire comme une unité complexe dont l'intégrité et le fonctionnement normal dépendent de l'harmonie qui doit exister entre l'occlusion des dents, l'anatomie des structures articulaires et l'équilibre de l'ensemble des muscles de la mastication. Nous comprendrons facilement que de ces trois facteurs c'est le facteur occlusion des dents qui, le plus souvent, viendra troubler l'équilibre de l'appareil masticatoire et engendrer des désordres dans l'articulation temporomandibulaire dont les structures faiblement vascularisées sont facilement endommagées par les traumatismes de la fonction et n'ont qu'un faible pouvoir de régénération (1).

Nous soulignerons d'abord quelques points de la physiologie normale de l'appareil masticatoire qui présentent un intérêt particulier. Ensuite nous étudierons les manifestations pathologiques de l'articulation temporomandibulaire et des structures connexes, puis leur étiologie, pour traiter enfin des moyens de diagnostic et de traitement qui sont à notre disposition.

Rôle des muscles

Le rôle des muscles est d'une importance primordiale dans la fonction de l'appareil masticatoire. De toutes les structures qui le composent, ils représen-

tent l'élément le plus constant et le moins susceptible de changer, malgré les traumatismes et toutes les manifestations pathologiques. (2)

Brodie (3) présente un schéma qui explique bien de quelle manière les diverses positions de la mandibule et ses mouve-

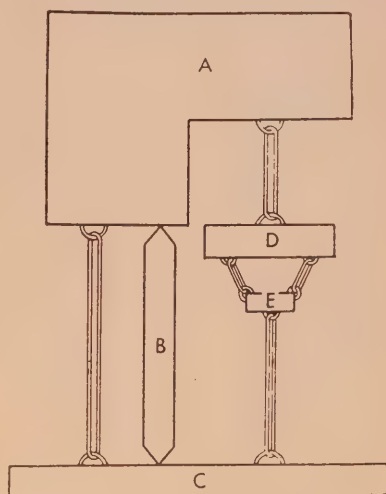


FIG. 1. Diagramme représentant l'équilibre musculaire de la région de la tête et du cou. A. tête (moins le haut de la face); B. colonne vertébrale; C. structures des épaules; D. mandibule; E. os hyoïde. (tiré de "The Temporomandibular Joint", par B. G. Sarnat, Thomas 1951, Springfield, page 114, fig. 42).

ments sont réglés par l'action des groupes musculaires, (Figure 1) Il s'explique ainsi:

"A, représente la tête moins le haut de la face, qui ne joue aucun rôle ici, et B, la colonne vertébrale. C, représente les structures des épaules auxquelles s'attachent la musculature de la tête et du cou. D, représente la mandibule et l'os hyoïde. Supposons que des bandes élastiques légèrement tendues unissent les diverses parties, il est évident que, bien que les diverses parties A B C D E ne puissent rester en place par elles-mêmes, l'addition d'élastiques en fait une unité stable."

La mandibule est donc maintenue en place grâce à l'action antagoniste des divers groupes musculaires. Il est possible de vérifier cette affirmation en observant les cas de résection des condyles. Chez ces patients, bien que l'on ait privé la mandibule de tout support dans la région des condyles, on peut observer que sa position et sa fonction subissent très peu de changements. (4)

Dans le plan vertical, la position de la mâchoire inférieure est déterminée par l'équilibre qui existe entre la force exercée vers le haut, par le temporal, le masséter et le ptérygoidien interne et les forces dirigées vers le bas qu'exercent la gravité et les muscles digastrique, mylo-hyoïdien et génio-hyoïdien.

La position antéro-postérieure de la mandibule est réglée, elle, par la traction antérieure qu'exerce le ptérygoidien externe sur le ménisque et la tête du condyle et à laquelle s'oppose l'action des fibres horizontales du temporal qui s'insèrent sur l'apophyse coronoïde, de même que l'action du groupe musculaire supra-hyoïdien.

Lorsque tous les muscles masticatoires sont à l'état de repos et que le patient est en position verticale normale, la mandibule adoptera une position connue sous le nom de "position de repos" et que l'on croit être constante durant toute la vie.

Cette position de repos est d'un intérêt considérable dans l'étude des désordres de l'articulation temporo-mandibulaire, car elle représente un des seuls points de repère fixe sur lequel il nous soit possible de nous fier durant l'examen clinique de notre patient. Cependant, il ne faut pas oublier que la position de repos peut se modifier temporairement à cause de l'hypertonie d'un seul ou de plusieurs muscles à la suite de fatigue, de maladie ou

de l'administration de certains médicaments. L'hypertonie musculaire, dont l'extrême est le trismus, affectera dans le sens contraire la position de repos.

Lorsque la mandibule est en position de repos, les dents ne sont normalement pas en contact. Il existe entre les dents un espace de quelque millimètres qui est appelé dans les textes américains "free way space" et pour lequel nous proposons le nom de *jeu inter-occlusal*.

Le mouvement normal qui doit avoir lieu lorsque la mandibule passe de la position de repos à la position de contact entre les dents est un mouvement de rotation simple autour d'un axe imaginaire passant à travers la tête des deux condyles.

Cependant il n'en est pas toujours ainsi et force nous est de décrire deux positions: l'une, appelée *relation centrique*, est la position qu'occupe la mandibule après avoir effectué le mouvement de rotation que nous venons de décrire. L'autre position sera appelée *occlusion centrique* ou position de contact occlusal maximum. Elle est la position occupée par la mandibule lorsque les dents sont serrées et que nous avons le plus grand nombre possible de contacts occlusaux.

La relation centrique et l'occlusion centrique devraient normalement être confondues en une seule position. Une grande partie de nos efforts, lors du traitement, consistera à faire coïncider ces deux positions. L'existence d'une différence entre l'occlusion centrique et la relation centrique doit être considérée comme anormale, car elle engendre des positions anormales du condyle dans la fosse glénoïde de même que des mouvements anormaux qui produiront certainement des conditions pathologiques. (5)

Rôle des structures de l'articulation

La présence de tissus cartilagineux avasculaires dans l'articulation temporo-mandibulaire indique que ces structures sont sujettes à une certaine pression. Par contre, nous venons de voir que, en l'absence du condyle, les muscles sont capables de régler à eux seuls les mouvements de la mandibule. Nous concluons donc en citant Brodie; (6)

"D'après l'évidence obtenue à date, il semble que la mandibule, y compris le condyle, est maintenue à sa position de repos par un équilibre de forces formé surtout par des muscles, mais modifié par la pesanteur. Cette position de repos ne dépend en rien des dents ou même du condyle. Quelle est donc l'importance du condyle? Disons que le condyle et l'éminence articulaire permettent un mouvement d'ouverture de la bouche plus efficace et plus économique et donne aussi aux mouvements masticatoires un haut degré de raffinement."

Les muscles dirigent donc les mouvements masticatoires et sont assistés en cela par les condyles. Pour que la fonction soit normale, le tout doit en plus s'harmoniser avec l'occlusion des dents.

Reisner (7) décrit trois types d'articulations qui s'harmonisent avec le genre de dentition présent. Il y a d'abord le type dont la fosse glénoïde est presque plate et dont l'éminence articulaire est pratiquement absente. On y trouve un condyle aplati, une occlusion "bout à bout" dans la région antérieure et des molaires à cuspides plats. Ce genre d'articulation se prête particulièrement bien aux mouvements de latéralité.

Il y a ensuite le type d'articulation dont la fosse glénoïde est excessivement profonde, le condyle est étroit et son col incliné vers l'avant. Les cuspides des molaires sont très hauts et pointus, les incisives du bas vont faire occlusion au talon de celles du haut. Ce genre d'articulation est pratiquement incapable de mouvements de latéralité et est limité aux mouvements verticaux.

Le troisième type sera un type moyen tenant le milieu entre les caractéristiques des deux précédents.

Nous aurons des désordres de l'articulation temporomandibulaire chaque fois que, à la suite de mutilations dentaires ou de vices de développement, le genre d'occlusion ne sera plus en harmonie avec le type d'articulation.

Manifestations pathologiques

Les manifestations pathologiques peuvent être localisées à l'appareil masticatoire proprement dit où elles prendront la forme de craquements ou douleur dans l'articulation temporomandibulaire, de spasmes musculaires ou de subluxation du condyle avec une ouverture de la bouche, soit limitée, soit excessive, selon le cas. Les symptômes peuvent en plus se localiser

dans des régions voisines de l'articulation temporomandibulaire. Nous aurons alors des manifestations du syndrome de Costen qui présente un problème fortement controversé et que nous ne pourrions qu'effleurer ici.

Les craquements ont lieu chaque fois que la synchronisation entre les mouvements du ménisque et ceux de la tête du condyle est brisée et que celle-ci dépasse sous pression les bords du ménisque. (8) Il peut y avoir craquements surtout au début ou à la fin des mouvements d'ouverture. Chacun de ces craquements représente un certain choc qui, à la longue, traumatise les structures de l'articulation et déclenche des phénomènes inflammatoires.

Les muscles rétracteurs de la mandibule agissent sur le condyle seul alors que les muscles protracteurs agissent aussi sur le ménisque. S'il y a spasme musculaire, le condyle peut être tiré en arrière alors que le ménisque restera à sa position normale. Il y aura alors une pression qui sera exercée par le condyle sur le bord postérieur du ménisque ainsi que sur l'amas de tissu conjonctif richement innervé qui se trouve situé postérieurement au condyle dans la cavité glénoïde. Ce déplacement engendrera de la douleur qui viendra s'ajouter à celle que produisent déjà les phénomènes inflammatoires.

Lorsqu'il y a sensibilité dans l'articulation, le patient cherche à éviter les mouvements et les contacts des dents qui lui causent de la douleur. Il en résulte un excès d'activité musculaire qui pourra conduire à des spasmes. Il y aura alors trismus et l'ouverture de la bouche pourra être limitée considérablement.

La réaction aux traumatismes soufferts par l'articulation peut être complètement différente et prendre la forme de subluxation du condyle. Il y a alors une distension excessive de la capsule articulaire et des ligaments qui normalement devraient limiter les mouvements du condyle. Ce dernier alors continue son excursion au delà de l'éminence articulaire. Dans ce mouvement, il dépasse le bord du ménisque en faisant entendre un craquement caractéristique.

Syndrome de Costen

En 1934, Costen décrit une série de symptômes manifestés dans les environs de l'articulation temporomandibulaire lors des désordres de celle-ci. Cet ensemble de symptômes est désigné depuis sous le nom de syndrome de Costen. Les symptômes principaux en sont les suivants:

- Surdité partielle.
- Impression d'avoir les oreilles bouchées.
- Bourdonnements d'oreilles.
- Douleurs sourdes dans les oreilles et alentour.
- Légers étourdissements qui disparaissent si l'on insuffle de l'air dans la trompe d'Eustache.
- Maux de tête graves et continuels localisés au vertex et dans la région occipitale.
- Sensation de brûlure à la langue et dans la gorge.

Costen attribue ces symptômes d'abord à la compression de la trompe d'Eustache lors de la fermeture excessive des mâchoires. Il en résulterait un dérangement de la pression intra-tympanique affectant l'ouïe et produisant des étourdissements.

Les mouvements excessifs du condyle, toujours d'après Costen, irriteraient la corde du tympan et le nerf auriculo-temporal. Enfin les traumatismes intra-articulaires entraîneraient une perforation du ménisque, une érosion de la plaque tympanique du fond de la fosse glénoïde et entraîneraient des douleurs à la dure-mère par l'intermédiaire des nerfs récurrents.

De nombreux auteurs, tout en reconnaissant que certains des symptômes décrits par Costen sont causés par les désordres de l'articulation temporomandibulaire, refusent les explications qu'il fournit en disant que ses théories reposent sur de faux concepts anatomiques.

Zimmerman (9) affirme avec emphase qu'une articulation trop fermée ne peut en aucune façon faire pression sur la trompe d'Eustache ou traumatiser les structures tympaniques du labyrinthe. Elle ne peut donc entraîner des désordres auditifs qui, d'après cet auteur, seraient

plutôt dus à une condition catarrhale coexistante.

Sicher (10) dit de la même façon que: "la seule raison qui puisse expliquer le mal fonctionnement de la trompe d'Eustache est une enflure ou un oedème de sa membrane muqueuse à la suite d'une stase lymphatique ou veineuse."

Si nous nous rappelons que les fluides inflammatoires peuvent, par voie lymphatique, filtrer de l'articulation temporomandibulaire jusque dans l'oreille moyenne, nous pourrions envisager un autre mode d'influence des désordres de l'articulation sur la fonction auditive. (11)

Zimmerman (9) et Sicher (12) rejettent aussi toutes les théories de Costen qui voudraient expliquer les douleurs à la dure-mère, les maux de tête et la neuralgie glosso-pharyngienne. Ils affirment que toutes ces douleurs sont des douleurs irradiées. Elles sont déclanchées par la pression qu'exerce le condyle sur les fibres de l'auriculo-temporal qui innervent la capsule articulaire et la masse de tissu conjonctif située derrière la condyle dans la fosse glénoïde.

Étiologie

Nous avons vu que l'ensemble de la musculature représente un facteur tout à fait stable dans l'appareil masticatoire. Nous avons aussi vu que l'anatomie de l'articulation temporomandibulaire s'harmonise presque toujours avec le genre d'occlusion présent à l'origine. Par contre, les mutilations de l'occlusion sont excessivement fréquentes à la suite des extractions, du déplacement des dents et de nombreuses autres causes qui nous sont familières. Ce sont donc les désordres de l'occlusion qui le plus souvent viendront troubler l'équilibre de l'appareil masticatoire et causer des désordres de l'articulation temporomandibulaire.

Les facteurs étiologiques de ces désordres peuvent se classer en quatre groupes:

- 1—désordres musculaires,
- 2—fermeture excessive de l'articulation,
- 3—déplacement postérieur du condyle,
- 4—mouvements anormaux du condyle.

Désordres musculaires: Dans les cas de bruxisme ou de grincement des dents il y

a hyperactivité des muscles masticatoires et les dents sont maintenues en contact sous une forte pression pendant des périodes de temps souvent assez longues. Cette condition multiplie le travail demandé à l'articulation, de sorte que les forces fonctionnelles peuvent excéder la capacité de résistance des structures articulaires, même en présence d'une occlusion parfaite. Par contre, si l'occlusion est mutilée, le bruxisme exagérera les dommages produits par les désordres occlusaux d'une façon considérable.

L'habitude d'une mastication unilatérale a un effet analogue à celui du bruxisme, puisqu'elle charge un seul condyle du travail normalement accompli par les deux.

Fermeture excessive de l'articulation: Il y a fermeture excessive de l'articulation quand il y a absence ou érosion excessive des dents postérieures. Aussi lorsque la dimension verticale des pièces de prothèse complètes est insuffisante ou que les pièces partielles ne portent pas leur part des forces occlusales. Lors de sa fermeture, le mâchoire inférieure n'est arrêtée par des contacts occlusaux que plusieurs millimètres passé la position de repos. Il en résulte une rotation excessive du condyle dans la fosse glénoïde avec

distention de la capsule articulaire et pression sur le bord postérieur du ménisque.

Déplacement postérieur du condyle: A la suite des changements de position des dents, consécutifs à des extractions ou dans certains cas à des malformations des arcades dentaires, il peut arriver que l'occlusion centrique soit située de quelques millimètres postérieurement à la relation centrique. Il en résulte un déplacement postérieur du condyle qui fait alors pression sur la portion postérieure du ménisque et sur le tissu conjonctif situé derrière le condyle. Cette position est inconfortable, douloureuse et entraîne souvent des spasmes musculaires destructifs.

Thompson (13) a remarqué un tel déplacement dans certains cas de malocclusion de classe II. (Figure 2) On en rencontrera aussi lorsque des troisième molaires du bas, ayant perdu leur antagoniste, se trouvent en supraocclusion et créent un plan incliné s'appuyant sur la surface distale de la deuxième molaire du haut pour pousser le condyle postérieurement.

Mouvements anormaux du condyle: Toute condition occlusale, qui nécessite de la part de l'articulation temporomandibulaire des mouvements anormaux, produira tôt ou tard de la pathologie. Ces mouve-

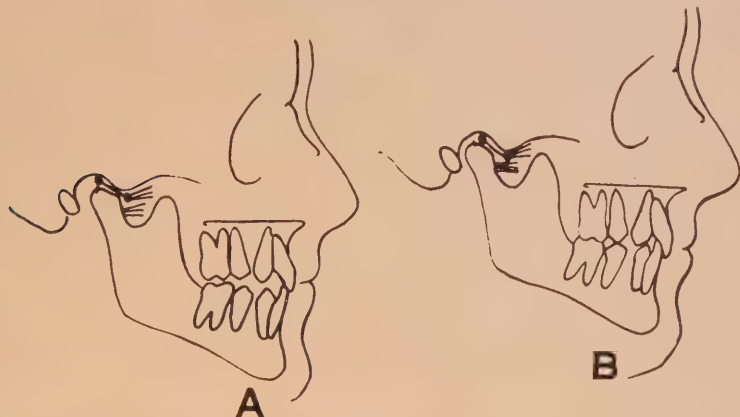


FIG. 2. Schéma de radiographies céphalométriques latérales—A. remarquer la relation normale du condyle, du ménisque et de l'éminence articulaire lorsque la mandibule est position de repos—B. remarquer la dislocation qui a lieu lorsque la mandibule est forcée vers le haut et vers l'arrière lors de l'occlusion des dents—La mandibule est en position de contact occlusal qui diffère de la relation centrique. (tiré de "The Temporomandibular Joint" par B. G. Sarnat, 1951, Thomas, Springfield, page 130, fig. 43).

ments anormaux se rencontrent entre autres, dans les cas où les dents font occlusion cuspe à cuspe, au lieu de se rencontrer normalement. Cette relation de cuspe à cuspe ne présente pas la stabilité d'une interdigitation normale et tout le travail se trouve rejeté sur l'articulation.

De la même manière, lorsqu'il y a des contacts occlusaux prématurés, soit en occlusion centrique, soit lors des excursions latérales, ou encore lorsque des restaurations ont été placées en surocclusion, le patient se trouve forcé d'adopter une occlusion centrique anormale ou d'effectuer des excursions latérales inhabituelles. Il en résulte des positions et des mouvements anormaux des condyles dans la fosse glénoïde. Le patient essaiera souvent aussi d'user ces contacts prématurés en grinçant des dents. Il aggravera ainsi l'état pathologique puisque le bruxisme exagère toujours les dommages causés par les désordres de l'occlusion.

Diagnostic

Avant d'étudier les moyens de diagnostic, il nous semble opportun de mentionner quelques conditions pathologiques qu'il faut différencier des désordres temporomandibulaires d'origine occlusale.

L'articulation temporomandibulaire peut d'abord être le site d'une manifestation d'arthrite rhumatoïde ou être attaquée lors d'une septicémie, d'une scarlatine, diphtérie ou gonorrhée. (15)

Il y a aussi la possibilité d'une péricéramentite ou d'une pulpite d'une molaire donnant lieu à une douleur irradiant vers l'articulation temporomandibulaire. (15)

Enfin, Burkett (15) mentionne la possibilité d'un furoncle localisé à la paroi antérieure du canal auditif. Dans un tel cas, la palpation du canal produit une forte douleur.

Moyens de diagnostic: Lors du diagnostic clinique, nous avons deux points de repère fixes à notre disposition. D'abord, la ligne médiane du haut, puis la position de repos de la mandibule que l'on peut reproduire plusieurs fois à volonté et qui servira de point de départ à toutes nos observations.

Nous devons chercher à percevoir les

craquements de l'articulation. Pour cela, il faut palper l'articulation en plaçant légèrement les doigts sur les condyles ou dans le canal auditif, pendant que le patient ferme la bouche, puis l'ouvre le plus possible. On peut aussi écouter ces craquements à l'aide d'un stéthoscope. Ensuite, il faut observer le comportement de la ligne médiane lors des mouvements d'ouverture de la bouche.

Un craquement perçu à la palpitation entre la position de repos et la position occlusale indique que le condyle presse sur la partie postérieure du ménisque. Par ailleurs si le craquement a lieu à la fin du mouvement d'ouverture il indique qu'il y a subluxation et que le condyle dépasse antérieurement le ménisque.

Une déviation à droite de la ligne médiane du bas à la fin du mouvement d'ouverture indique que l'excursion du condyle droit est limitée. Par contre, si c'est entre la position de repos et la position occlusale que la ligne médiane dévie, c'est que certains contacts prématurés des dents forcent la mandibule à prendre cette position anormale.

Le mouvement de fermeture de la mâchoire, à partir de la position de repos jusqu'à la position de contact occlusal, doit normalement être une simple rotation autour d'un axe imaginaire passant par les deux condyles. Il est essentiel de déceler tout mouvement anormal prenant place dans cet espace de jeu inter-occlusal. Si l'examen clinique est insuffisant, nous pourrions nous aider de radiographies céphalométriques superposées ou de radiographies de l'articulation temporomandibulaires prises sur des appareils tels ceux de Lindblom ou de Updegrave, qui nous fournissent certains points de repères.

Comme moyens accessoires de diagnostic, nous pouvons aussi mesurer l'ouverture de la bouche du bord incisif des centrales du haut au bord incisif de celles du bas. Cette distance normalement varie entre 30 et 35 millimètres. Elle augmente s'il y a distention des ligaments et est limitée s'il s'agit de trismus.

Enfin, les modèles d'étude nous révéleront les détails de l'occlusion et nous aideront considérablement non seulement

à compléter notre diagnostic, mais aussi à établir notre plan de traitement.

Traitement

La grande majorité des cas de désordre de l'articulation temporomandibulaire répondent très favorablement au traitement conservateur. C'est pourquoi, nous ne parlerons pas ici des traitements chirurgicaux.

Puisque la cause de ces désordres réside dans les mutilations de l'occlusion, le traitement le plus logique sera la correction de l'occlusion. Pour accomplir ce travail, trois moyens sont à notre disposition. Il y a d'abord le traitement d'orthodontie, puis la mise en équilibre de l'occlusion par un meulage approprié des dents, enfin l'usage de restaurations diverses. Le plus souvent, nous devons avoir recours à une combinaison de ces trois moyens.

Si les désordres occlusaux sont accentués par un bruxisme continu, nous devons arrêter cette hyperactivité musculaire, soit par un traitement psychiatrique, soit par des exercices de détente musculaires, soit en employant des médicaments qui produisent une relaxation musculaire.

Dès que les traumatismes intraarticulaires auront été supprimés par la correction de l'occlusion, les ligaments articulaires commenceront à revenir à leur état normal et seront bientôt en mesure d'accomplir leur fonction normale, de diriger et de limiter d'une façon efficace les mouvements de la mandibule.

Cependant, si après plusieurs semaines, la correction de l'occlusion n'a pas suffi à contrôler la distention des ligaments et que certains symptômes, comme des craquements et des mouvements excessifs, persistent, nous aurons recours à un traitement plus radical. Nous injecterons à l'intérieur même de la capsule articulaire des solutions sclérosantes, telles que "l'intra-cain" en solution huileuse ou le psilliate de sodium. Ce traitement produit une contraction et une sclérose des ligaments de la capsule, rétablissant ainsi les relations normales entre le condyle, le ménisque et la fosse glénoïde. Il est très efficace, mais il ne doit jamais être admini-

stré avant que l'occlusion ait été complètement corrigée.

Conclusions

Des quelques observations que nous venons de faire au sujet de l'articulation temporomandibulaire, nous voulons souligner les conclusions suivantes:

1—La musculature est relativement constante durant toute la vie et joue un rôle primordial dans le fonctionnement de l'appareil masticatoire.

2—Les structures articulaires assurent un plus grand raffinement aux mouvements de la mandibule.

3—Les mutilations de l'occlusions sont très puissantes à briser l'équilibre de l'appareil masticatoire. Leur action destructive est grandement augmentée par l'hyperactivité musculaire.

4—Les symptômes peuvent être localisés à l'articulation ou se manifester en plus dans les structures avoisinantes. L'explication de ceux-ci fait encore le sujet de controverses.

5—Les moyens de diagnostic de ces désordres sont surtout cliniques.

6—La correction de l'occlusion est la partie la plus importante du traitement.

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Montréal.

Nouvelles de l'Association

Accueil aux diplômés des écoles dentaires étrangères

Malgré les efforts conjugués des facultés dentaires du Canada, des collèges provinciaux et de l'Association Dentaire Canadienne pour aider les diplômés des écoles dentaires étrangères, les journaux ont souvent publié à ce sujet des communiqués assez peu élogieux pour la profession dentaire et les autres groupements professionnels. Il est évident que les auteurs de ces critiques ne connaissent pas ou peu le fond du problème. Les dentistes étrangers qui ont répondu aux exigences de notre réglementation sont les premiers à louer notre façon de procéder dans ce domaine. Il n'y a pas longtemps, une lettre des plus pathétiques, traitant de cette question, paraissait dans le Edmonton Journal. Quelques jour plus tard, le même journal publiait une réplique de six dentistes étrangers, diplômés d'Ecoles européennes. Cette lettre collective, qui mettait heureusement les choses au point, se lisait comme suit:

"Cher Monsieur,

Nous sommes un groupe de dentistes diplômés d'universités européennes, en Latvie, Lithuanie et Allemagne. Nous ignorons le sort que réservent les autres professions aux émigrés, mais nous désirons faire part au public de notre expérience personnelle.

La lettre écrite dans ce Journal par Per Gisvold, le 21 octobre, nous paraît être une attaque injuste contre les lois et les exigences de ce pays; nous voulons donc nous porter à la défense de tous ceux qui nous ont aidé à retrouver notre place au sein de notre profession et la liberté, telle que nous la concevons.

Deux de nous ont été diplômés de l'Université d'Alberta en mai 1952 et sont actuellement en clientèle; deux autres sont finissants et espèrent terminer leurs études l'an prochain; enfin, les deux derniers sont en troisième année.

Nous aussi fûmes déçus d'apprendre que le Canada ne reconnaissait pas les

diplômés européens; nous en avons trouvé la raison peu après.

L'Université à élaboré une procédure pour évaluer les qualifications et la compétence de chaque candidat; on peut se procurer une copie de ces règlements au bureau du registraire. Nous en avons tous pris connaissance et avons suivi ces directives; partout et toujours nous avons reçu de tous l'appui le plus cordial et le plus complet et pourtant notre langage étranger devait leur occasionner bien des ennuis. Nous nous sommes rendus compte de la différence qui existe entre la formation des dentistes du Canada et celle des dentistes de notre pays. Il ne serait pas juste qu'on nous autorise à exercer avec une somme moindre de bagage scientifique que celle qu'on exige des propres enfants des citoyens canadiens.

Une série d'examens nous permet d'obtenir tout le crédit possible dans chaque matière et on prépara à notre intention un horaire spécial. En dépit de classes déjà encombrées, on nous accepta et on nous permit de perfectionner nos études. Nous espérons être capables de prouver notre gratitude un jour.

Nous n'avions aucune ressource pécuniaire, si ce n'est ce que nous avions pu gagner; toutefois, on nous permit de solliciter un emprunt au même titre que les autres étudiants, quoique les fonds de cet organisme universitaire ne fussent pas très considérables. Dans une circonstance spéciale, le Club Kiwanis a aidé l'un des nôtres à poursuivre ses études; des particuliers nous ont aussi aidés.

Fort de notre expérience, nous ne pouvons pas concevoir qu'on condamne ce pays, qui nous a ouvert ses portes, quand nous avions besoin d'un foyer imprégné de liberté."

Olaf Ulmanis
Nikalojus Novosickis
Claudia Stegmanis
Beatrice Kalejs
Anna Rudovics
Hans Fast.

Le docteur Garvin donne sa démission

Le Journal de l'Association Dentaire Canadienne, depuis son début, n'a eu qu'un seul rédacteur-en-chef, le Dr Garvin. Et, fait à noter, pas une seule fois il a outrepassé la limite de temps fixée pour l'impression du Journal. Dans sa lettre de démission, le Dr Garvin fait remarquer que son départ coïncide avec le cinquantième anniversaire de son entrée dans la profession. On reconnaît bien son caractère et son intention bien arrêtée de voir le Journal occuper la première place dans sa vie, quand il écrit: "C'est avec le plus grand plaisir que j'aiderai le nouveau rédacteur, qui que ce soit, de toutes les manières possibles, s'il en manifeste le désir; j'aurais beaucoup de peine d'ap-prendre à cette heure que je puis nuire au Journal en aucune façon."

Durant toute sa carrière, le Dr Garvin a appuyé avec enthousiasme tout geste et toute décision susceptibles d'aider la cause de la dentisterie canadienne. Il a toujours endossé les principes professionnels reconnus et mis de côté les solutions d'occasion et temporaires prises pour marquer le pas, en attendant de prendre des décisions appuyées sur la vérité.

A cause des circonstances décrites par le Dr Garvin, le Comité de Publication a accepté avec regret sa démission par la résolution suivante:

"Attendu que le Comité de Publication accuse, avec grand regret, réception de la démission du Dr M. H. Garvin comme rédacteur du Journal de l'Association Dentaire Canadienne;

Attendu qu'après avoir étudié les circonstances exposées dans la lettre du Dr Garvin, entourant cette démission;

Il est résolu que la démission du Dr Garvin soit acceptée et qu'on recommande à l'Exécutif de reconnaître d'une façon appropriée les nombreuses années de service du Dr Garvin comme rédacteur."

Nouvelle publication: "Your child and mine".

Un fascicule attrayant intitulé "Your child and mine" ayant comme sous-titre "La base de la santé dentaire", peut être maintenant obtenu. Le Comité d'Hygiène dentaire de l'Association Dentaire de

l'Ontario, aidé d'un Comité de Rédaction composé de dentistes en vue et de spécialistes en hygiène alimentaire et d'inspecteurs d'écoles, a réalisé ce travail. Le sujet a été étudié à fond pour ne présenter que des faits concrets et prouvés d'une manière éducative. De nombreuses photographies et des graphiques variés ornent le pamphlet.

Les sujets qu'on y traite sont les suivants:

- 1) Les premiers deux ans et demi.
- 2) L'enfant se rend chez le dentiste.
- 3) La première permanente s'amène.
- 4) La diète et santé dentaire.
- 5) Le brossage des dents.
- 6) L'occlusion normale et l'occlusion anormale.

Il y a de plus de nombreux sous-titres clairement imagés. Cette publication convient très bien à une salle d'attente; elle éduque le patient et répond à un grand nombre de questions qu'il se pose. De plus, elle peut rendre de grands services aux professeurs en hygiène dentaire. On peut se procurer ce fascicule au prix d'un dollar en s'adressant à l'Association Dentaire Canadienne, 234 rue St-George, Toronto.

Session de 1953 de la Fédération Dentaire Internationale

Le Congrès annuel de la Fédération Dentaire Internationale aura lieu, cette année, à Oslo, Norvège, du 26 juillet au 1er août 1953.

Réunion du Comité Exécutif de l'A.D.C.

Le Comité Exécutif de l'Association Dentaire Canadienne s'est réuni au secrétariat, à Toronto, le 12 février et les jours suivants.

Numéros du Journal demandés

La demande pour certains vieux numéros du Journal de l'Association Dentaire Canadienne a épuisé les réserves de l'Association. Celle-ci recevra avec reconnaissance les numéros (dont la liste apparaît ci-après) des membres qui n'en n'ont plus besoin. S.V.P. les adresser à:

l'Association Dentaire Canadienne
234 rue St-George,
Toronto.

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1952—

Numéro de janvier—vol. 18, no 1

Numéro de février—vol. 18, no 2

Numéro d'avril—vol. 18, no 4

Distinction du président de l'A.D.C., le docteur Gustave Ratté

Le docteur Gustave Ratté vient de recevoir de l'Université Laval, de Québec,

la Médaille du Pape, en reconnaissance de services rendus au cours de la célébration du centenaire de la fondation de cette Université.

Le Dr Ratté, s'était rendu responsable du logement et du transport de tous les visiteurs distingués qui ont rehaussé de leur présence l'éclat des fêtes du centenaire. Pour son dévouement, le Dr Ratté a reçu la médaille de Sa Sainteté le Pape Pie XII.

L'Eugénol dans la chirurgie des maxillaires

Inutile de présenter l'Eugénol aux praticiens de l'art dentaire. Même ceux qui emploient pour leurs pansements occlusifs exclusivement le ciment provisoire et les spécialités, l'ont manipulé lorsqu'ils étaient étudiants.

L'Eugénol a un emploi où il est remarquable et sur lequel on ne paraît pas avoir insisté: comme pansement dans la chirurgie des maxillaires.

Il semble, en effet, avoir dans les plaies osseuses, une double action: caustique légère et calmante, et paraît en même temps stimuler la réparation.

Je l'ai d'abord employé dans le traitement des alvéolites. La description, l'étiologie des alvéolites ainsi que certains moyens thérapeutiques, ont déjà fait l'objet d'articles dans la littérature professionnelle. Dans beaucoup de liquides ou de pâtes destinés à être mis dans les alvéoles pour calmer la douleur, on relève la présence d'Eugénol.

Lorsqu'un malade revient le lendemain d'une extraction et se plaint d'avoir souffert et de souffrir encore, il suffit de mettre dans la plaie débarrassée préalablement de son caillot une boulette de coton stérile assez fortement imbibée d'Eugénol et non tassée.

Quelques minutes après, invariablement, la douleur diminue et cesse. Il est bon de laisser une heure ou deux ce pansement et de le retirer ensuite intégralement (le coton ayant toutes sortes d'inconvénients).

Sous ce rapport, il est plus élégant, plus rationnel, et indispensable, même si on doit, et c'est préférable, laisser ce calmant agir plus longtemps, de découper aseptiquement un fragment de mèche iodoformée, de l'imbiber d'Eugénol, et de le laisser dans l'alvéole un, deux ou même trois jours.

Chaque fois qu'une extraction a été pénible et que l'on craint des suites douloureuses, la mèche iodoformée eugénolée est d'un effet remarquable et bien qu'obligé de revenir faire retirer son pansement, le client vous en est très reconnaissant.

Naturellement, en cas de saignement post-opératoire, il est nécessaire de tasser assez énergiquement la mèche, ce qui évidemment diminue un peu l'effet calmant mais, par contre, lorsqu'il faudra la retirer, elle n'adhérera que peu à la plaie alors que sans avoir été imbibée, elle serait assez collée pour nécessiter de tirer et de provoquer des douleurs.

Dans des cas en apparence semblables, il y a une différence nette entre les suites opératoires avec mèche iodoformée sèche ou eugénolée. Quant à l'action sur les tissus mous, elle est caustique et il est bon d'éviter de faire couler le liquide en tassant la mèche, ce qui est facilement réalisable en pompant l'excès au fur et à mesure avec une compresse de gaze ordinaire aseptique.

L'Information Dentaire, décembre 1952.



PAGES EDITORIALES

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L'exercice illégal

Le problème soulevé par l'exercice illégal de la chirurgie dentaire par les techniciens conserve toujours son acuité et son importance au sein de la vie professionnelle des chirurgiens-dentistes de la province de Québec. Les praticiens se plaignent à qui veulent les entendre et surtout au Collège des Chirurgiens-Dentistes que le domaine de la prothèse, qui leur appartient légalement, est envahi par les techniciens, qui transigent directement avec notre population et qui confectionnent pour elle des appareils dentaires sans directives et sans ordonnances de leur part.

Cette question de pratique illégale peut s'envisager sous plusieurs aspects; elle a des relations avec notre formation professionnelle, avec les conditions économiques dans lesquelles vivent nos clients et avec la mentalité ou l'esprit du public et des membres de la profession dentaire.

Elle doit s'étudier de haut, c'est-à-dire être envisagée dans son ensemble, en décelant ses causes pour trouver des solutions qui soient en rapport avec les facteurs qui la favorisent.

Cette difficulté à laquelle se bute l'exercice légal de la profession dentaire n'est pas localisée à notre province; les autres régions du Canada et des Etats-Unis en souffrent au même degré et parfois d'une façon plus aiguë et plus complexe. Il suffit de lire le rapport du Comité des Services auxiliaires de l'Association Dentaire Canadienne dans les Délibérations de l'A.D.C. 1952 pour se rendre compte qu'en d'autres provinces, la partie est beaucoup plus chaude et que les techniciens ont porté de durs coups pour obtenir le droit d'exercer ouvertement et directement pour le public. En Angleterre, il en est de même et, en Belgique, les stomatologistes et les dentistes viennent de

remporter sur les mécaniciens une victoire qui a exigé la sortie des grosses batteries. Un peu partout, on met en oeuvre des moyens qui varient dans leur simplicité et leur efficacité, mais toutes ces méthodes tendent à l'éducation du public et des membres de la profession dentaire.

Il serait trop long d'énumérer ici toutes les solutions qui ont été préconisées pour régler ou du moins atténuer cette calamité, mais elles méritent qu'on les note puisqu'elles ont été mises en oeuvre en face du même problème.

Le Collège des Chirurgiens-Dentistes, par l'entremise des membres de son Comité de Répression de la Pratique illégale, a accompli une immense besogne depuis plusieurs années pour régler cette situation.

Son travail jusqu'à maintenant, a surtout porté sur les façons de dépister les fauteurs de la loi et de faire sanctionner par la justice leurs actions malhonnêtes. La loi a été amendée à plusieurs reprises pour simplifier les enquêtes, faciliter l'élaboration des preuves et alourdir les peines infligées aux coupables.

Le problème d'exercice illégal a pris aujourd'hui une envergure telle qu'il devrait faire l'objet d'une étude approfondie par une Commission composée de citoyens compétents et éclairés, qui considéreraient tous ses aspects, d'une façon objective, et à la lumière de renseignements qui leur seraient fournis par les autorités intéressées.

Cette Commission d'enquête, formée de juristes, d'hommes d'affaires, d'universitaires et de dentistes pourrait, après avoir considéré tous les facteurs de la situation, soumettre au Collège un rapport, qui renfermerait des suggestions appropriées.

Un organisme public, soucieux de bien-être de notre population et imbu de justice sociale pourrait entreprendre cette étude. Cette enquête exigerait des déboursés au Collège, mais cet argent serait dépensé d'une façon *positive* et il servirait à éclairer ceux qui sont chargés du problème et à satisfaire les dentistes qui réclament une abolition de cet état de choses.

GERARD DE MONTIGNY

"Faisons donc un retour sur nous-mêmes et rappelons-nous qu'il faut beaucoup de choses pour poser un diagnostic exact. S'appuyer sur l'expérience d'un confrère spécialisé n'a jamais déshonoré personne et méfions-nous des solutions de facilité. Négliger une stomatite peut être aussi grave que de prendre une primo-infection tuberculeuse pour un simple rhume . . . C'est le diagnostic précoce des affections graves qui reste le point crucial du traitement. Et ce diagnostic sera d'autant plus tardif que les "petits signes" auront été ignorés. Aux stomatologistes d'y penser à temps, lorsque les malades viennent les consulter pour un traitement souvent anodin; aux médecins de les prendre sérieusement en considération lorsqu'ils le remarquent."

DR F. BEGAUX

La stomatologie au service de la médecine.

Collège des Chirurgiens Dentistes de la Province de Québec

A l'élection du Collège des Chirurgiens Dentistes de la Province de Québec tenue, le 27 octobre 1952, les gouverneurs dont les noms suivent furent élus par acclamation, pour un terme de quatre ans, représentants des divisions, universités et sociétés dentaires suivantes:

Montréal-Est

Drs C. Archambault, J. R. Brossard, H. Brouillet, L. Deslauriers, V. Dubé, J. A. Fortier, J. P. Lachapelle, Lorenzo Picard, A. Surprenant et E. Vinet.

Montréal-Ouest

Drs G. G. Armitage, W. E. Charland, M. L. Donigan, E. S. Dorion, M. Goldenberg, L. E. Kent, O. A. Lefebvre et N. Solomon.

Québec

Drs L. P. Goulet, R. Langlois, D. V. Plamondon et G. Ratté.

Trois-Rivières

Drs C. Godin et L. Lacoursière.

St-François

Drs R. M. LeBlanc et L. Letendre.

Université de Montréal

Drs E. Charron et P. Geoffrion.

Université McGill

Drs D. P. Mowry et A. G. Racey.

Société Dentaire de Montréal, Inc.

Dr J. G. Lajoie.

Société Dentaire des Trois-Rivières, Enrg.

Dr E. Dansereau.

Société de Stomatologie de Québec

Dr J. Hamel.

"Montreal Dental Club"

Dr J. W. Abraham.

"Mount Royal Dental Society"

Dr C. Finklestein.

Ces gouverneurs forment le Bureau provincial de Chirurgie dentaire qui, à sa première assemblée tenue le 21 novembre 1952, procéda à l'élection de son exécutif et de ses différents comités.

Conseil Exécutif

Dr J. W. Abraham, Président; Dr D. V. Plamondon, 1er vice-président; Dr V. Dubé, 2ème vice-président; Dr Denis Forest, Registraire; Dr E. Vinet, Président sortant de charge; Drs C. Archambault, G. G. Armitage, J. A. Fortier et A. Surprenant, conseillers.

Conseil de Discipline

Dr G. G. Armitage, Président; Drs C. Archambault et J. A. Fortier, conseillers.

Comité de Consultation

Drs E. Charron et D. P. Mowry.

Comité de Répression de la Pratique Illégale

Dr E. Vinet, Président; Drs J. R. Brossard, W. E. Charland, E. Dansereau, L. Deslauriers, V. Dubé, C. Finklestein, C. Godin, L. P. Goulet, J. P. Lachapelle, L. Lacoursière, R. M. LeBlanc, Lorenzo Picard et G. Ratté, commissaires.

Association Dentaire Canadienne

Drs A. G. Racey et G. Ratté, représentants officiels; J. A. Fortier et C. A. E. McCabe substitués.

Commission des Examinateurs

Dr A. Surprenant, Président; Drs G. G. Armitage, J. R. Brossard, W. E. Charland, C. de Grandmont, C. Godin, J. M. Gosselin, Y. Lafleur, O. A. Lefebvre, D. V. Plamondon, G. Ratté et E. Vinet, commissaires.

Comité de Législation

Dr C. Archambault, Président; Dr A. Surprenant, Vice-président; Drs G. G. Armitage, J. R. Brossard, J. A. Fortier et G. Ratté, commissaires.

Comité d'Hygiène dentaire publique

Dr C. Archambault, Président; Drs E. Charron, V. Dubé, J. A. Fortier, C. A. E. McCabe, D. P. Mowry, G. Ratté, N. Solomon et A. Surprenant, commissaires.

Comité des Finances

Dr J. R. Brossard, Président; Drs H. Brouillet, W. E. Charland, J. A. Fortier, J. G. Lajoie et N. Solomon, commissaires.

Comité de Pédagogie

Association des Techniciens Dentaires de la Province de Québec

Drs V. Dubé, J. P. Lachapelle, A. L'Archevêque et A. C. Racey.

Comité des Relations extérieures

Dr E. S. Dorion, Président.

Comité d'Etude—Assurance-Santé

Dr R. Langlois, Président; Drs E. S. Dorion, J. Hamel, C. A. E. McCabe et N. Solomon, commissaires.

Comité d'Etude—

Spécialistes et Spécialités

Dr C. Archambault, Président; Drs M. L. Donigan, V. Dubé, P. Geoffrion, A. W. Mitchell, A. G. Racey et A. Raymond, commissaires.

Le Président et le Registraire du Collège font ex-officio partie de tous les comités ou commissions.

Nouvelles des Sociétés

Société Dentaire de Montréal

Séance de novembre 1952

Cette réunion régulière mensuelle fut tenue à la faculté de chirurgie dentaire de l'Université de Montréal.

Le conférencier invité pour cette séance était le Dr James McCutcheon, professeur de prothèse à l'Université McGill, qui fut présenté à l'assistance par le Dr Raoul Lussier. Le Dr McCutcheon montra des transparents illustrant les différentes phases de la confection d'une prothèse partielle. En plus des travaux préliminaires d'usage, le conférencier insista sur l'importance de modèles d'étude et des modifications qu'il faut apporter aux dents présentes pour obtenir un parallélisme favorable à la stabilité de l'appareil. Le Dr McCutcheon offrit enfin de sages conseils sur le montage final de la pièce partielle sur l'articulateur.

En remerciant le conférencier au nom des membres de la Société, le Dr Vincent Tremblay lui offrit une preuve tangible de leur reconnaissance pour son excellente communication.

Le programme de la séance comprenait un autre travail, présenté, celui-là par le docteur Roland Gendron, chargé de cours en périodontie à l'Université de Montréal.

Cette conférence avait pour but d'exposer aux membres présents la conception américaine du problème de la pyorrhée alvéolaire.

On se souvient qu'à une séance spéciale de la Société, tenue en octobre, le Dr René Vincent, stomatologiste de Paris, avait fait part d'une conception différente de ce problème.

Tandis que le professeur Vincent reconnaît deux formes de pyorrhée: le type ischémique et la forme inflammatoire, nous, ici, parlons d'alvéolyse sèche ou purulente. Dans le premier cas, absence de suppuration et, dans le deuxième cas, exudat purulent. Mais, le terme alvéolyse, que nous employons, réfère toujours dans notre idée, à un phénomène inflammatoire. Lorsque l'affection ne dépasse pas le stade inflammatoire, nous parlons d'alvéolite. Si le processus inflammatoire n'est pas enrayé, nous assistons alors non plus seulement à une déminéralisation de l'os alvéolaire, mais à sa condensation; nous avons alors l'alvéolyse.

Nous ne pensons pas que ces diverses réactions inflammatoires soient dues à une action microbienne endogène; au contraire, lorsque nous avons suppuration des crevasses gingivales, nous croyons que la formation de l'exudat purulent est consécutive à la condensation osseuse. Par conséquent, nous pensons que, pour prévenir et guérir l'alvéolyse, il faut pouvoir déceler toutes les causes capables de provoquer une réaction inflammatoire de nos tissus périodontaires, compte tenu, toujours, du milieu dans lequel elles se produisent et le facteur microbien ne serait qu'une des nombreuses causes susceptibles de produire l'alvéolyse.

Comme intermède entre les deux conférences, l'assistance put regarder un programme de télévision réalisé par des étudiants à la faculté de chirurgie dentaire, au poste CBFT.

Ce programme faisait partie d'une série d'émissions organisées au sein des différentes facultés de l'Université de Montréal pour illustrer les domaines respectifs de ces diverses écoles.





Photo copyright Clifford R. K.

An old Indian of the Bella Coola Indians displaying a ceremonial blanket. While this sample is made of cloth, originals are made of goat and bear hair, woven together to make the design.

LINCOLN ON LIMITATION

The philosophy behind the Executive order setting a top limit of what man is permitted to earn is the philosophy of levelling off at the top, of taking from those who have and giving to those who have not. How different the principles of President Lincoln, who during the Civil War in his message to Congress of December 3, 1861 said:

"Property is the fruit of labour; property is desirable; is a positive good in the world. That some should be rich shows that others may become rich, and hence is just encouragement to industry and enterprise. . . . Let not him who is houseless pull down the house of another, but let him labour diligently to build one for himself, thus by example assuring that his own shall be safe from violence. . . . I take it that it is best for all to leave each man free to acquire property as fast as he can. Some will get wealthy. I don't believe in a law to prevent a man from getting rich; it would do more harm than good."

Committee for Constitutional Government in U.S.A.



ROBERT F. HARVEY, D.D.S.
Montreal, P.Q.

Quebec Editor, The Journal of the C.D.A.
Secretary, The Montreal Dental Club 1948-49.
Lecturer, Periodontia Dept., McGill University



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Current Status of Dental Research*

by JOHN B. MACDONALD, D.D.S., M.S.,† Toronto, Ontario

THE World Health Organization of the United Nations has defined health as a "state of complete physical, mental and social well-being and not merely the absence of disease." Dental disease has the unique and unenviable distinction of blocking the achievement of this ideal on all three counts for almost 100% of the civilized populations of the world.

Complete physical well-being is not compatible with the chronic infection, the loss of function and the pain which are characteristic of dental disease. Likewise pain, facial deformity and the need for prosthesis are not conducive to mental health. Social well-being on the individual and community level is not enhanced by a dental treatment service that reaches a minority of the population and cost \$48,400,000 in Canada in 1951. The Columbo plan for aiding the industrial and agricultural expansion of backward countries is considered by many to be the most important step taken toward the prevention of war. Canada spent last year only about one half as much on this plan as on treating dental disease. This is not a state of social well-being.

I do not wish to dwell on these morbid aspects of dentistry but only to point out that our efforts to cope with this situation have so far been emin-

ently unsuccessful. It is well known that dental disease accumulates faster than it can be treated and public health workers are all too familiar with the limited success of today's preventive programs which demand a high degree of public co-operation.

The seriousness of the problem and the lack of success in handling it focus attention on the need for research. It has determined the philosophy of the Division of Dental Research of the Faculty of Dentistry at the University of Toronto. The "big three" of public health problems in dentistry are caries, periodontal disease and malocclusion. It is our belief that research in dentistry should be aimed at these problems.

But our philosophy goes much further than this. It is nothing new for a research program to be aimed at these problems. For example, many programs of research in dentistry have been aimed at better treatment. These have resulted in fine techniques and a high degree of skill in dental practice, but they have not alleviated the public health problems. Many research programs have sought a preventive panacea — e.g. penicillin pastes, ammonia, chlorophyl and others. These have not met with notable success. The one great finding in prevention — water fluoridation — resulted from epidemio-

*Address to the combined sections of health officers, dental public health section and public health nursing, Ontario Public Health Association Conference, Toronto, Nov. 4, 1952.

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†Chairman, Division of Dental Research.

logical studies of the distribution of dental caries.

It is our belief at the Division of Dental Research that before we can run we must walk and before we can walk we must crawl. What we lack is the basic understanding of the disease processes and abnormalities with which we are concerned and, even worse, we know far too little about the physiology of oral structures and about the dynamic equilibria involved in a state of dental health. Our research program is aimed at disclosing some of these fundamental relationships. It is, to coin a phrase, "pre-public health research."

Our viewpoint regarding dental research can best be illustrated by scanning some of the projects now in progress in the Division.

PROJECTS NOW IN PROGRESS

Paynter and Grainger, members of our staff, are engaged in a long range project concerned with the optimum nutrition of a tooth. The dental profession has concerned itself with dental manifestations of malnutrition in respect to the pathogenesis of disease but the more fundamental question concerning optimum nutrition has rarely been asked. A single observation will illustrate the importance of this problem. Fluoride is present in all teeth and it might be considered to be a trace element requirement for optimum nutrition of teeth. Its presence in suitable concentration during tooth formation apparently results in a better tooth.

The study now in progress is concerned with determining the effect on growing teeth in the rat of other trace elements and vitamins. Pregnant rats and their offspring are being fed a variety of diets and water supplies. The effects on the teeth of the offspring are being examined macroscopically for shape, size, cusp inclination, etc. by Grenz-ray for degree of calcification, histologically for form and cusp fusion, and spectrophotometrically for composition. A study by Sognnaes and Shaw

has already shown that caries susceptibility of rats and monkeys is influenced by prenatal diet. Perhaps if we knew more about the nutritional requirements of developing teeth we could produce teeth more resistant to caries.

Studies closely associated with nutritional effects are concerned with the effects of endocrine secretions on the jaws and teeth. Paynter has been studying the effect of thiouracil on the jaws and teeth of rats. His findings suggest that, contrary to earlier belief, the quality of teeth is not affected by thyroid deficiency, but only the rates of morpho-differentiation, apposition and calcification. His findings in fact make it clear that earlier investigators studying the effects of surgically induced thyroid deficiency reported effects on teeth which were actually due to parathyroid deficiency. Plans are underway to expand these studies in co-operation with the Banting Institute by using hypophysectomized animals maintained on various combinations of endocrine products. The studies will provide new information about the influence of endocrines on jaw and tooth development and maintenance. They cannot be considered studies of caries or periodontal disease or malocclusion but it is obvious that all three of these conditions are influenced either directly or indirectly or both by the composition, structure and growth of teeth, jaws and soft tissues, all of which are in part under endocrine control.

Nikiforuk is studying oxidation-reduction potentials of whole saliva using various reducing dyes and attempting to find out what intermediary metabolites affect the rate of reduction. The objective of these studies is simply to learn more about the characteristics of the complex chemical phenomena of glycolysis and proteolysis as they occur in the indefinable mixture of salt solutions, cell debris and mixed bacterial populations which we glibly call "saliva." The surprising thing is that in spite of the heterogeneity of the mixture, chemical behaviour is often quite uniform and reproducible. Perhaps the

mixture is less heterogeneous than we think. Perhaps influences within the mouth about which we know nothing maintain a uniformity of bacterial populations.

In the field of growth and development a large series of studies are in progress which are employing three different tools. One is cephalometric analysis which is a means of using fixed position lateral and frontal head radiograms for assessing growth and position of bones and teeth. By this means data are accumulating rapidly relative to normal and abnormal patterns of development. Already this tool is useful for predicting aberrations from the normal and for indicating the need for interceptive treatment.

Another method is the electromyographic analysis of muscle forces in normal and abnormal function. It is a method of recording muscle activity on paper as a diphasic wave dependent on electrical potential in the muscle. By this means Moyers has been able to report on the behaviour of various muscles or groups of muscles during movements of mastication. His results in many instances show to be wrong the theories growing out of examination of cadavers and recorded in anatomy textbooks.

The third tool being used is a strain gauge. This is an instrument for recording on paper the strength of forces. It has been adapted to studies of the force of the lips against the teeth, and the forces of tongue thrust and thumb sucking habits and others. By its use we are building background information by which we may some day be able to define normal and abnormal forces.

In my own bacteriology laboratory we have been attempting to throw light on the nature of the complex bacterial mixtures involved in periodontal disease. The flora of the oral cavity is probably the most complex bacterial flora in nature. Evidence which we presented in a series of papers indicate that the bacteria responsible for infection in periodontal disease are the

same as those found in a variety of infections of other mucous membranes and that they are also found in smaller numbers in the healthy mouth. We are able to serially transmit this infection subcutaneously in experimental animals and we have been able to isolate most if not all of the many component organisms of these infections. But we have repeatedly failed to reproduce the experimental infection by recombining the isolated pure cultures of bacteria.

For this reason we have gone back a step farther and have studied a group of motile anaerobic bacteria which were particularly difficult to cultivate.

The results of this study will shortly be published as a monograph. The study illustrates well the philosophy of the Division of Dental Research. This lengthy and technical paper is the kind that is generally considered impractical. To many practising dentists it might mistakenly be considered as "ivory tower" science. It contains no single fact that can be made use of directly by the practising dentist or by the public health worker. Yet to us it is a stepping stone to the solution of a dental health problem. By undertaking this study we are closer to reproducing the experimental disease by pure culture. When this has been accomplished we can study in animals the factors involved in predisposition. And some day we will know enough that we can apply our knowledge to the prevention of periodontal disease.

CONCLUSIONS

What I have said will indicate to you that our whole program is aimed at dental public health. But do not think that all is well in dental research. We have serious obstacles to overcome. Although dental disease last year cost approximately one sixth as much as all other medical treatment including hospitalization, National Research Council grants for medical research in 1952 amounted to about \$565,000 and dental research grants were only about \$25,-

000. More money was available but no personnel were available to make use of the funds. Approximately one of every 12 graduates in medicine in Ontario is engaged in some research. In dentistry the proportion is about one to 150. Clearly there is not nearly enough dental research in proportion to the size of the problem.

Of the personnel engaged in research, nearly all have less time available for research than for teaching. This is because the University has not

been able to make provision for research staff as such.

If the public and the profession were aware of the need for an expanded program of dental research, it seems likely that the necessary funds for personnel and laboratories would become available. Public and professional awareness is dependent on dental public health education. It would appear that education in respect to the need for research should be a large part of our dental public health programs.

A Simple Yet Complete Standardized Pre-Extraction Record

by HOWARD J. MERKELEY, D.D.S., M.D.S., F.A.C.D., Winnipeg, Manitoba

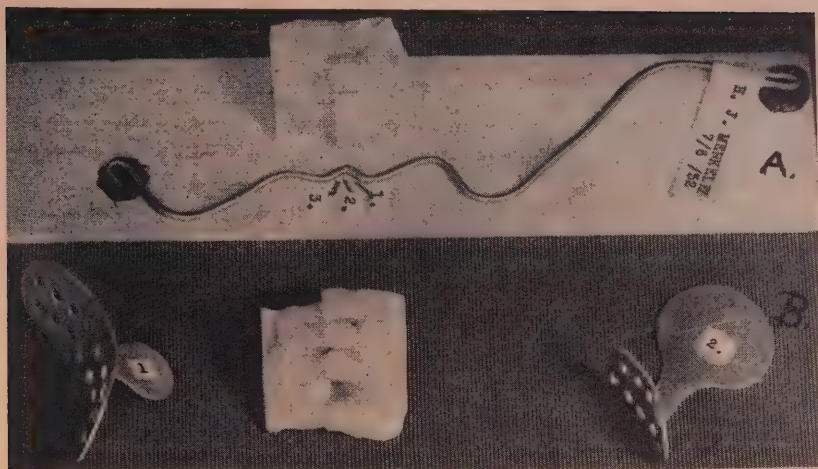
MORE and more it is being recognized that to extract all the teeth without having first made a record of facial contours, tooth size, colour, and arrangements, etc., is almost criminal.

For many years we have made records, and from time to time added steps as necessity for a more complete record became evident. The following system is thus the fruit of many years' effort and is presented as possibly of some interest to those seeking to give improved denture service. The record is very easily made, and also very impressive to the patient, as he at once realizes the effort made on his behalf. In fact, so much so is this the case that many patients now present themselves requesting this service, even though they do not anticipate a complete extraction for some years.

We proceed as follows:—A piece of 16 English gauge galvanized iron wire about nine inches long, has an elongated, flattened loop made at one end. We lay the loop end against the forehead and proceed to bend the wire to the facial contour, mid-line, teeth occluded in centric. We proceed from the glabella down the nose using the fingers to bend the wire, with the help of small pliers if necessary. Use round beaked pliers so that the wire will not

be marred. Under the chin we terminate the wire in a small loop. Adjusting the profile wire to the face we next register the incisals of the uppers by a circumferential groove, made with a pair of side-cutting pliers. With a pencil we draw a line on the labial of the lower central incisors at the level of the upper incisals, teeth occluded in centric, then measuring this overbite we make another circumferential groove to denote the incisal edge of the lower incisors. This will be above the groove already made, in case of an overbite. With the patient sounding SISS, SISS, a number of times we note the incisals of the lowers and make a small nick on the labial of the wire at this level. To preserve this record it is mounted on a piece of balsa wood 8 or 9 inches long and 2 inches wide and $\frac{1}{4}$ inch thick. A name tag is attached to the wire by winding a piece of one-half inch wide adhesive tape around the flattened loop at the top of the wire. It is wound around the loop to lie flat against the paddle, the name is written on it and it is covered with Scotch tape. Lay the profile wire on the balsa paddle with the nose pointing to the right.

A pencil mark in each loop is used to locate the spots where a daub of



H.J. MERKELEY

SHADE

65 NU HUE

NOTE

- NO. 1 A CIRCUMFERENTIAL GROOVE DENOTES THE LOWER INCISALS TEETH OCCLUDED IN CENTRIC.
 NO. 2 A CIRCUMFERENTIAL GROOVE DENOTES THE UPPER INCISALS TEETH OCCLUDED IN CENTRIC.
 NO. 3 A NICK DENOTES LOWER INCISALS ESTABLISHED BY SOUNDING SISS SISS A FEW TIMES

A. Profile record on balsa paddle.

B. Trays and cast of left anteriors. The cast can be accurately related to the right half.

C. Reverse side of A.

hot compound is stuck to the balsa wood, vaseline the wire loops and press them into the warm compound, remove when cool. We can thus relate the wire to the balsa paddle at any time. Outline the wire on the wood and mark the incisal numbers 1, 2 and 3 on the balsa paddle in the incisor area. We are now ready to relate a cast of the right upper and lower teeth in centric occlusion, to the profile wire.

Two simple aluminum trays are made. One is a flat piece of aluminum with a flat piece projecting at a right angle as a handle. The other is a flat piece of aluminum bent in the middle at a right angle with the smaller end narrowed where it joins the other half, and the end made circular as a handle. The trays are perforated

to give attachment to the impression material.

Using the second tray we take a labial impression of the right anterior upper and lower teeth occluded in centric, the handle positioned so that it is continuous with the median line. Pour in plaster, the tray handle laid flat to the base you are pouring on, so that cast will show a flat surface corresponding to the median line of the palate, as we will later relate the left anteriors to this with dowels. Trim the median line end until it conforms to the palatal median line. Bore two holes in this surface and insert two pin heads: shorten the pin shanks so they will project three-sixteenths of an inch from the plaster cast. Parallel the pins and fasten with sticky wax, heads buried. Cut

an X groove into this surface and soap the whole surface.

Take a bilateral labial impression, teeth occluded in centric, using an alginate in tray number one, and relate the poured cast of the right side to its place in the impression; hold in place firmly and pour the left side of the impression. When set, remove and separate the right and left sections. They can be reassembled very readily. Next we use the second tray and an alginate to take another right side thin impression; cut off any alginate covering the left incisors so the impression is flush to the median line. Remove and trim the lingual to the median line also. Reinsert into the mouth and put the profile wire against the face to the left of the tray handle. Hold firmly in place and with a drop of sticky wax fasten the tray handle to the profile wire. Remove the impression and wire en masse and place the right side cast in the impression, and using the daubs of compound on the balsa wood as guides we centre the loops in their grooves and gently push the cast down. The pins will punch into the wood and so fix the relation of the teeth to the profile wire. Yet the cast can be removed at will and assembled with the left section to give us all the anterior teeth, the dowels serving to relate the left and right sections accurately.

When the case is completed the patient is given the balsa wood paddle with the profile wire and cast. The paddle carries the date, the name of the patient, shade of the teeth, and the explanation of the restbite on the reverse side. Scotch tape holds the profile wire to the balsa wood paddle. The paddle is placed in a manila envelope, the face of which carries printing as follows:—

VALUABLE

PROPERTY OF Howard Merkeley..
DATE

DO NOT BEND

Preserve this profile wire. It is the only record of your natural profile. Take it to your dentist every three or four years, and he can check with it and adjust your dentures if necessary to restore your normal youthful profile.

Dr. H. J. Merkeley

This record gives us the vertical dimension, the facial contour in the median line, the tooth arrangement, tooth shape, size, shade and overbite, as well as any peculiarities and arch width.

This explanation has been made in detail, but time consumed in making this record is really very short, in terms of value.

Professional men must help the world to accept the working principle that money, although delightful, is only one of the compensations of this world. There are other rewards more satisfying, and it is one of our tasks to make this understood.

In this world of morals and working values, the professional man must have a concern for the rights and the freedoms of mankind everywhere. It is a proper part of his study that he should know well these rights and freedoms and the philosophies beneath them.

With Thomas Jefferson, he might well say, "I have sworn upon the altar of God eternal hostility against every form of tyranny over the mind of man."—Leslie G. Moeller, Iowa City, in Jour. Am. College of Dentists.

In the world we live in today we cannot preserve our liberty and achieve peace by military mobilization alone. It is necessary to mobilize also the spiritual assets of freedom-loving people in order to achieve adequate power to halt the march of evil.

—Admiral Richard E. Byrd.

Allergy to Local Anaesthetic Agents*

by H. S. MITCHELL, M.D., Montreal, Quebec

MEDICAL literature contains many references to reactions following local anaesthetics, but few instances due to allergy. Untoward reactions may be due to individual idiosyncrasy to a drug; to the use of excessive quantity of a drug which is ordinarily safe within a certain dosage range; to vaso-constrictors or other drugs in the same solution; or to allergy.

For a discussion of types of reactions and their management the reader is referred to an article by Sadove, Wyant, Gittelson and Kretchmer¹. The development of contact dermatitis among professional personnel handling local anaesthetics is apparently generally recognized² and is beyond the scope of this communication. Procaine has been used intravenously rather extensively and few instances of sensitivity have been reported. Watt³ refers to an asthmatic reaction which may follow intravenous procaine but cites no case. Derbes and Englehardt⁴ reported five cases in which death occurred within four minutes to two hours following local anaesthesia. These authors apparently considered them examples of "idiosyncrasy" rather than allergic reaction. They point out that previous exposure is necessary to induce the allergic reaction. They draw attention to the important point that compounds with the para amino-benzoic base are common in certain drugs and foods (sulphonamides, vitamin B, etc.). The possibility of cross sensitization is therefore a theoretical and practical one. Waldrott⁵ refers to a case, that of an asthmatic person, free of asthma for two years, in whom application of cocaine solution to the nose was followed immediately by severe asthma. He also refers to two cases of vasomotor rhinitis and two

cases of asthma "following inhalation of ether and the applications of local anaesthetics to the nose." Thomas and Fenton⁶ report nine patients with reaction to pontocaine. Three of the nine were fatal. A man aged 36 years, and a known asthmatic, was given 2% pontocaine by pharyngeal spray. The amount given is not stated. He was seized with a severe asthmatic attack, muscular twitchings occurred, he went into shock, respiration ceased and he died in 20 minutes. The two other fatal cases showed no frank allergic manifestations, and had convulsions. In three of the nine cases, patch test to pontocaine was positive.

Adler and Simon⁷ reported the case of a female, aged 22 years, suffering from tuberculosis; she had a tooth extracted under infiltration anaesthesia into the buccal fold and into the palatal sinus; 2 ml. of a 4% solution of procaine with epinephrine was used. The following day the patient's face was oedematous, the swelling disappearing in four or five days. Fifteen days later another tooth was extracted, under the same technique and with the same solution. Next day a "most impressive" swelling of the face occurred, with vesicular eruption on the skin of the involved area. Subsidence of swelling and healing of lesions took place in 8 to 10 days. The condition was recognized as due to procaine. In the patient intracutaneous injection of 0.5 cc. of 4% solution of procaine produced a skin reaction of 3.90 cms. square surface oedema and redness in about 6 hours, and in 24-48 hours a papulovesicular eczematoid eruption which subsided in about two weeks. Intracutaneous injection produced no focal reaction in the buccal area where signs of allergy were first seen. Patch tests

*Presented before the Montreal Dental Club, October 23, 1952. From the Department of Allergy, the Montreal General Hospital and the Queen Mary Veterans' Hospital, Montreal.

using solution of procaine were also positive.

The Prausnitz-Kustner test was positive. Tetracaine (pontocaine) produced similar reactions. Nupercaine produced no reaction. The authors believed this difference was related to the first two named being derivatives of para amino-benzoic acid, while the latter is a derivative of quinoline. The authors, as a result of their experiments and observations, recommended the use of nupercaine in individuals with procaine sensitivity. They found this procedure successful in a surgeon, and in a dentist, who suffered from procaine dermatitis of the hands. They stated they had no evidence to offer as to whether or not allergic intolerance to a local anaesthetic might be responsible for fatal accidents during local anaesthesia.

Schiff and Schiff⁸ reported the case of a 74 year old white woman, with hypertensive cardiovascular disease, who received intravenous procaine. Over a period of about one month she received 12 injections, the first of 0.5 grams the remainder all of 1.0 gram in 500 cc. saline. 32 days after starting this treatment, and about 2 hours after the 13th injection, she had a mild chill and slight dyspnoea. A much more severe reaction followed two hours after another injection of procaine 3 days later, associated with dyspnoea, wheezing and vasomotor collapse. Recovery followed subcutaneous epinephrine and benadryl. A quite severe similar reaction occurred 2 hours after intravenous procaine injection, and from which the patient recovered following epinephrine administration. There was no reaction to one intradermal injection of 0.05 cc. of 1% procaine. The authors' comment on this case is briefly that "insufficient evidence is advanced to confirm the impression of an anaphylactic reaction." The commonest type of anaphylactic reaction follows closely or is coincident with the intravenous injection of specific antigen. No evidence of sensitivity, by intradermal or passive transfer tests is proffered. The nature of the

reactions described are very similar to common pyrogenic reaction, and left ventricular failure in an elderly hypertensive cardiovascular subject could possibly account for the symptoms which occurred.

CASE REPORTS

Case 1—P.W., a white housewife of 32 years was referred by her dentist because of a large swelling of the face which followed the use of local anaesthetic in the mouth. Swelling appeared 6 to 8 hours after procaine infiltration, was maximal in about 24 hours, and subsided in about 2 to 3 days. A similar course of events took place each time she had local anaesthesia for dental work (at least 2 or 3 times) and now reached the point where the discomfort produced rendered local anaesthesia undesirable. The development of this manifestation was a relatively recent event, as in adolescence she experienced no such reactions. At first the swelling was attributed to trauma, or infection, but her husband who was a surgeon raised the question of drug sensitivity. It was recalled that about two hours following intraspinal anaesthesia, for labour, she lost consciousness for a period of an hour or so, and her general condition and unexplained collapse gave her medical attendants and family several hours grave worry. She recovered consciousness, had a severe headache for a day or so, and developed dermatitis at the site of the lumbar puncture. The anaesthetic agent was dibocaine (pontocaine). She suffered from seasonal hay fever. Her son had seasonal hay fever.

One minim of procaine solution from four different manufacturers' sources (0.5%) was injected intradermally in each of four sites on the forearm. No immediate reaction or wheal occurred. In about six hours each site began to swell and redden, and in 24 hours each site was 2 to 3 cms. in area, tense, red and painful. Signs of inflammation disappeared in two to three days. About a month later she developed an acute respiratory infection, and was given

procaine penicillin intramuscularly in the gluteal region. In about six hours, each of the sites on the forearm swelled, became reddened, slightly itchy, and slightly painful. She did not have headache, but it was now about a year since she had any anaesthesia for dental work, and her child was about nine months old.

Intradermal tests to pontocaine and nupercaine were negative.

Passive transfer tests in a non-allergic healthy young adult were negative to procaine, nupercaine and pontocaine. This patient subsequently received nupercaine anaesthesia for dental surgery, without reactions.

Case 2—A graduate white nurse, aged 24 years, developed a large tense facial swelling about 8 to 10 hours following procaine infiltration for dental work. This occurred on at least two separate occasions, after previously experiencing no such difficulty. Procaine 0.5% intradermally on the forearm produced in 6 to 8 hours a reddened induration, resembling a positive tuberculin reaction which persisted for about two days. Passive transfer tests were negative; she did not return for further tests, having moved to another district.

Six other individuals who were referred because of suspected allergy to local anaesthetics used in dental or bronchoscopic treatment were submitted to intradermal tests with procaine, nupercaine and pontocaine. None reacted to any of these drugs. It was concluded, on review of their histories, and in correlation with their skin tests, that they were not allergic to the drugs used.

COMMENT

It seems to have been generally re-

cognized that immediate allergic reactions may follow the use of local anaesthetic agents. It may not have been sufficiently realized that delayed reactions of allergic nature may occur. Where the reaction is in a superficial area, consequences may not be grave, although very uncomfortable. Our first case did not have a positive skin test, either immediate or delayed, to the spinal anaesthetic agent used, but it is difficult to overlook the possibility that her postpartum collapse may have been an allergic reaction due to the spinal anaesthetic, with oedema of the meninges. The relation of local anaesthetic agents to large swellings following dental surgery was clearly established.

The allergy in our first two cases is of the tissue, or tuberculin type, without evidence of circulating antibodies demonstrable by passive transfer.

Where sensitivity to local anaesthetic agents is suspected, either patch, or intradermal testing, or both, should be done prior to clinical use.

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One of the surest ways to perpetuate a practice is the method of pausing to praise every patient. Its results are not much short of magic.—L. A. Lucas in *Jour. of Oklahoma Dental Assoc.*

Doing things by halves is worthless, because it may be the other half that counts.—Kodak Magazine.

Children need models more than critics.—Joubert.

Old Dental Paintings and Prints

by J. MENZIES CAMPBELL, D.D.S., I.D.S., F.I.C.D., F.R.S.E., Glasgow, W.2, Scotland

FOR centuries, internationally renowned artists not infrequently chose dental scenes as their subjects.

From a historical angle, such early delineations are particularly interesting. They form enduring records of dentistry, as practised when blacksmiths and itinerant charlatans were its chief exponents; also, of the evolutionary stages, through which it passed before being elevated to professional status.

These dental pictures often exhibit certain striking similarities. The atmosphere is invariably grim. The principal figures are the tooth-drawer, the sufferer with his wife, and the onlookers. The operator is prone to display his crude instruments, in order to thrill the curious and morbid, entirely disregarding his victim's reaction. Pain and apprehension are, consequently, characteristic features.

Among the many artists, whose shadows flit across the dental kaleidoscope, may be cited:—

ANNIBALE CARACCIO, 1560-1609. One of his works represents the typically attired tooth-drawer of the seventeenth century, with strings of extracted teeth suspended around his neck.

GERARD VAN HONTHORST, 1590-1656. The favourite Court painter of the Princes of Orange, he chose, for his stimulating paintings, cellar settings illuminated by candles or torches.

ADRIAEN VAN OSTADE, 1610-1685. His best known dental scene depicts a mid-seventeenth century barber-surgeon's premises, replete with the usual appointments. The tooth-drawer, his dwarf assistant (holding a receptacle for blood), the patient with his distressed wife and friends are all magnificently portrayed.

GERARD DOU, 1613-1675. He was a pupil of Rembrandt. His dental paintings, with superb backgrounds, are masterpieces.

ANTON FRANZ MAULPERSCH, 1724-1796. The most outstanding of the late baroque artists. His adroitly drawn market scene (Fig. 1.) is reminiscent of Venetian influence. Measuring 19 inches x 15½ inches, it delineates a finely attired travelling charlatan (complete with impressive diploma) vending wares at a village fair. His assistant arouses considerable interest by extracting teeth. Several attractions have been provided in order to divert the attention of a throng of rustics, besides suppressing the victim's shrieks.

THOMAS ROWLANDSON, 1756-1827. A prominent English caricaturist, whose works include Transplanting the Teeth (1787), and A French Dentist [de Chémant] Shewing a Specimen of his Artificial Teeth and False Palates (1790).

LOUIS LEOPOLD BOILLY, 1761-1830? His well-known *Le Baume d'Acier* is superbly executed.

GEORGE CRUIKSHANK, 1792-1878. His coloured etchings embrace several dental scenes.

THEODOR ROMBOUTS, 1597-1637, of Antwerp. His oil painting, *Der Zahnarzt*, hangs in the Prado in Madrid. According to Proskauer, an etching after this was executed by Paul André. Although like Rombouts', it portrays eight figures, one has been deleted on the right, and another added on the left side.

The writer, however, desires to draw particular attention to an etching (Fig. II), likewise after Rombouts. As far as



Fig. 1—DER CHARLATAN (1785), By Anton Franz Maulpersch. Etched by Jac. Schmuzer. {J. Menzies Campbell collection.}

he is aware, it has never been reported in dental or medical literature.

Its satirical title is *L'Opérateur Menteur*. This was executed by *PIERRE LANDRY* (1630-1701), who engraved contemporary portraits and frontispieces. He was, also, a publisher of engravings in Rue St. Jacques à St. François de Sales, Paris. Although the figures in it are identical with those in the etching by André, there are these additions:—A scroll bearing the title of the work: shelves and jars in the background: blood oozing from the victim's mouth; and scrolls recording in obsolete French the comments of the various members in the group. It is not impossible that Landry altered André's etching, so that it might be utilized for advertising purposes by a drug-store, which sold wines.

The most intriguing feature of all three, i.e. the painting by Rombouts

and the subsequent etchings by André and Landry, is undoubtedly the collection of surgical instruments displayed both on the table and by the operator. Those for dental use are the pelican, forceps, tongue depressor, probe, and mouth dilator.

The central figure, a typical seventeenth century French tooth-drawer, with a string of extracted teeth suspended around his neck, is depicted as somewhat of a poseur: less interested than he should be in the operation upon which he is engaged. The composition of this picture clearly creates an impression of disorder.

The etching by Landry, executed circa 1690, measures 29½ inches x 20½ inches. Its previous owner was the Dowager Lady Harlech.

The writer would refer readers, who desire to study the subject of early dental paintings, prints and carica-



Fig. II—L'OPERATEUR MENTEUR (c. 1690). Etched by Pierre Landry.
{J. Menzies Campbell collection.}

tures, to the undernoted works:—

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14 Buckingham Terrace

My recipe for good office management in dentistry is simply this: Take one cup of promptness, a dash of neatness, a face full of smiles and a full measure of truth thoroughly saturated with knowledge of your work. Then add two jiggers of enthusiasm plus a tumbler of good common "horse sense"; mix well and serve both yourself and your office force. Drink deeply and watch your practice grow! It is as simple as all that.—L. A. Lucas in *Jour. of Oklahoma Dental Assoc.*

Teach love and patience and courage along with a proud way of carrying the head. Polish minds and wits as well as fingernails. Educate heads as well as heels. Shining hair is set off by shining eyes that are aglow with a vital interest in life and people. The smile that reveals white, even teeth should come from the heart, not the lips. Honest, clear-cut standards are like road signs, pointing the way to constructive living. They will save your child from getting lost and separated from the others along the journey.—Constance J. Foster, *The Attractive Child*, in *Bul. of N.Y. State Soc. of D. for Children*.

To read the Bible is to take a trip to a fair land where the spirit is strengthened and faith renewed.—General Dwight D. Eisenhower.

Toronto in 1896*

by MR. CHARLES A. MCKENNA, Toronto, Ontario

TORONTO in 1890-95 was vastly different from the Toronto as you know it today. Bloor street 50 years ago was the most northerly Street in the city and when you crossed Bloor Street you were in Yorkville. Yonge Street south from Bloor Street was occupied on either side with medium-sized homes and cottages, and small stores or shops. Torontonians of those days were stout feeders; among the shopkeepers, butchers, grocers, bakers and dairies predominated. Yonge Street was not a fashionable street but it was a paved street. Cedar blocks were used as paving material with life of 3 to 4 years. Yonge Street was the favourite thoroughfare to fashionable King Street where the better and larger stores were located. King Street was the fashionable choice or the choice of the fashionable for parading on foot or in carriages. The nearest approach to 5th Avenue's Easter Parade in Toronto was along King Street from Jarvis to Simcoe Street. The Lieutenant-Governor's home stood at the southwest corner of King and Simcoe Streets opposite Upper Canada College; at the southeast corner stood New St. Andrew's Church, and opposite on the north side of King the Red Lion Hotel; the four corners being frequently designated as "Salvation, Legislation, Education and Damnation" — the last being most popular. The carriage trade did not patronize Eatons who sold only for cash, they preferred to deal with Michies, Murrays, Dubois, Walkers, Stitts, O'Briens, Kays and others who thrived on credit sales. All theatres were on Adelaide or King with Sheas on Yonge Street. Lower Yonge Street from King to Richmond housed the jewelry trade.

Toronto's only large office building

was the Confederation Life at Yonge, Richmond and Victoria Streets.

The Canada Life Building whose site is occupied by the new Bank of Nova Scotia building was not a large or high structure, but was built with a tower in its direct centre. This tower was a favourite spot to take visitors. It was perhaps one hundred feet high and an elevator carried sightseers to its platform. From this elevation one could see all over the city and Toronto island. Not that its height was so great but because no other or few buildings were nearly as high, and the view in any direction was not obstructed.

I expect you will wish me to stop trying to be a historian from memory and tell you something of your predecessors in your own profession from the time of my entering the dental supply business up to the time many of you can no doubt remember for yourselves.

It was in 1868 that the Ontario Legislature passed the act respecting dentistry incorporating the members of the dental profession in the province as the Royal College of Dental Surgeons of Ontario with the dual purpose of teaching and licensing. In the register of the Royal College of Dental Surgeons of that year, the first in which a register was kept, to my thinking, I find a peculiar situation. The number of registrants from Toronto were very few in comparison with the total members registered. For instance I find in 1868 of the 69 registered 4 gave their address as Toronto; in 1869, of the 68 additional dentists registered only 6 gave Toronto; in 1870 of 25 only one; in 1871 of 22 none gave a Toronto address; in 1872 of 13 two gave Toronto; in 1876

*Presented before the Downtown Dental Society, Toronto, Ontario, October, 1952.



CHARLES A. McKENNA

of 16 none gave Toronto and in 1878 of 22 only 4 gave Toronto addresses.

In 1875 the Royal College of Dental Surgeons opened a school of dentistry for teaching students. In 1878 the degree of Master of Dentistry was conferred by the College on F. G. Calender L.D.S.; J. B. Willmott D.D.S.; L.D.S., M.D.S.; Luke Teskey, M.D., L.D.S. and C. S. Chittenden D.D.S., L.D.S.

In 1888 the College of Dentistry of the Royal College of Dental Surgeons became affiliated with the University of Toronto and the first graduating class in Dentistry to receive the D.D.S. degree was in 1889.

In 1896 there were only 81 dentists practising in Toronto. From the city directory of 1896 the location of their offices were as follows: Yonge Street 23, King Street 7, Queen Street 10, College Street 12, Spadina Ave. 4, Bloor Street 5, Carlton Street 4, Shuter Street and Parliament Street 2 each; Elm,

Ontario, Sherbourne, Wellesley, Isabella, Albert, Buchannan, Grosvenor, Bathurst, Dovercourt, West Toronto Junction, Parkdale—1 each.

Equipment and furnishings found in dental offices in the early days were gasmeters, foot engines, chairs, cabinets, glass cases of stuffed birds and waxed flowers; offices were frequently heated with coal burning stoves. No sterilizers nor chair spittoon, the cabinets were highboys and there were a few electric engines, D.C., 110 volts only. Gas was still the most used illumination with a Welsbach mantel reflector which gave pretty fair illumination but generated a lot of heat. There were no x-ray machines.

Twelve of the practising Toronto dentists in 1896 had sons who became dentists—Drs. W. Willmott, Spaulding, Galloway, Pearson, Trotter, Adams, How, McLaren, Ball, Lennox, Sisley, Waldron. Some third generation dentists are presently in practice in Toronto. Drs. Galloway, Pearson, and Cameron Adams.

Dr. Adams' grandfather, Dr. F. G. Adams, operated the first free dental clinic of which I know. The building still stands at the southeast corner of Bay and Elm Streets.

Dr. O. W. Kennedy, an uncle of the late Dr. C. A. Kennedy, was the first manufacturer of local anaesthetic in Canada. This I know because I made it for him as an apprentice in pharmacy.

The dentist population in Toronto increased from 81 to 98 between 1896 and 1900. They had spread out and moved principally north and west. Yonge Street increased from 19 to 23; King Street decreased from 31 to 7, Queen Street from 12 to 10, College Street from 18 to 12, Spadina Ave. from 10 to 4, Carlton Street from 5 to 4, Dundas Street from 3 to 1, Dovercourt Road from 2 to 1 and Sherbourne Street from 4 to 1. Dr. Guy Hume was Toronto's first orthodontist and Dr. George Roberts its first exodontist.

I do not know and have no means

of knowing, but I think the bulk of the average dentist's income came from dentures or plates as they were commonly called; bridge work and gold crowns were just coming into use. Gold inlays had not been used yet but Dr. Taggart changed this situation with his development of the pressure casting process.

Extirpation of pulps and filling of root canals was quite common practice. Porcelain jacket crowns and inlays, many of them beautiful examples of ceramic art were used to some extent about the turn of the century. Gold foil, however, was the most popular, as well as the most lasting and satisfactory material for fillings. Amalgam was then as now a popular filling material but without the controls which most modern alloys possess. I very well recall the complaints of dentists as to the shortcomings of all alloys then available. I have seen patients where the bite had been opened to such an extent through alloy expansion as to prevent proper mastication. Not much advance was made in alloy manufacture until Dr. G. V. Black of Chicago published his findings covering 40 years of study, research and experiments on the physical characters of the human teeth in relation to their diseases and to practical dental operations together with the physical characteristics of filling materials. Dr. Black showed how to "balance" the elements of the alloy by counteracting the contraction of one with the expansion of another, how to control flow, how to fix the properties of an alloy by artificial aging or annealing so that they would remain unchanged for a long time and how to mix and manipulate to produce uniform results.

The first alloy bought by our company was Townsends in 1863, then Arringtons 1868, Westons 1876, Globe 1882, Splenord 1890 and Alba in 1894. You will note the seeking for something better. In the year 1896 Dr. Black offered to teach the manipula-

tion of the various metals in a dental alloy to any reputable manufacturer of dental filling materials. A representative of the White Company was the first student to take his course and in due time became the first graduate amalgam alloy maker. In 1900 True-dentalloy was produced and after 52 years still is one of the outstanding filling materials used in nearly every country in the world and possibly even in Russia.

As stated before Toronto's dentists increased in number in four years 1896-1900 from 81-98. Canada's growth had really begun. Immigration brought many thousand new citizens and they also have prospered. Dentistry in Toronto, Ontario and in all parts of Canada kept pace with the general increase of business and prosperity of Canada. The Canadian dentist has been quick to learn the newer techniques and in many instances improve them.

Many Canadian dentists went to the United States and made and left the imprint of their personalities, abilities and accomplishments in many places. Dr. C. N. Johnson who certainly did much for dentistry in the U.S.A. was indentured in Toronto to Paterson Fenton at College and McCaul Streets. Dr. Carl Waldron is Professor of Oral Surgery at the University of Minnesota. Dr. Don Galley of Oakville contributed much to dentistry and dental education in Chicago. Many others have made very considerable contributions to their chosen profession.

From 1900 Toronto changed her face. The automobile made its appearance. Many people became suburbanites. New streets, roads and thoroughfares became a necessity. Up to this time, Gerrard, Queen Street and Eastern Ave. carried traffic on the only bridges spanning the Don River.

The building of the Bloor, Danforth Viaduct opened a vast tract of building land readily accessible, to the downtown and other sections of the city. Row after row of stores, apartments

and homes mushroomed and tenants were waiting for them.

Dentists increased in number and spread themselves over the new and recently annexed sub-divisions. Patients were ready waiting. Distances had been cut and the lush and happy days of prosperity were with us and welcome.

Shortly came the first world war in 1914. Many dentists answered the call for dentistry in our Army, Navy and Air Forces. Canadian factories changed quickly from the fabrication of peace time to war time goods. Everybody was employed who wanted to work. Money was easily earned, and just as easily and quickly spent. Manufacturers of dental equipment went all out in the production of better equipment. The introduction of hydro power from Niagara Falls a few years before the war had made possible huge production of supplies for the armed forces, which could not have been possible so quickly and efficiently if we had not had access to electric energy as provided by the hydro. The dentists had the advantage of electric power, which resulted in practically every dental office in Toronto and On-

tario being equipped with electrically powered equipment, engines, lathes and sterilizers were a boon to every dentist. Shortly came the x-ray and then the dental unit and later the motor chair, all of which have helped the dentist to have as his own the most efficient and beautiful professional equipment for the alleviation of pain, the betterment of the nation's health and the insurance of sufficient income to live decently and respectably.

Recently I talked with a dentist who commenced practice in Toronto in 1905. He told me the greatest change he had noted was the friendly and fraternal attitude of the dentist of today as compared with the surly unfriendly and jealous attitude of his confrères in his own era.

A retired dentist who graduated in 1905 also spoke of the cordial and friendly relations among the Toronto dentists of today. This wonderful condition is due in great part to your group and other similar groups in the city, to the Academy and to the Ontario Dental Association.

S. S. W. Company,
250 College Street.

Bacterial toxins, wherever located, are a menace to good health and their removal from the body is advisable. Much has yet to be learned about the behaviour of bacteria under varying conditions in different individuals. Dental cesspools should not be tolerated, however, just because it may not be possible to state positively that secondary infection is present or likely to develop at some future time. Bacterial toxins can be crippling and can be fatal. It is the practitioner's duty to prevent disease wherever possible and for him to leave infected teeth in situ is betraying the trust that patients repose in him.—James R. Cameron in Jour. of Oral Surgery.

Of more than passing concern to members of the dental profession is a recent report that the annual wholesale candy bill of the American people is about a billion dollars. Last year, it is reported, retail candy sales in the United States totalled approximately 1,620 million dollars. National candy advertising expenditures which amounted to \$7,257,120 in 1950 jumped to \$10,119,889 in 1951 and to \$5,553,049 in the first six months of 1952.

The damage done human dentition by what formerly was considered only a pleasant and, at worst, an innocuous concoction staggers the imagination as much as it does the budget. Dentists must double or triple their educational efforts to help counteract the habit's damaging effects.—From Editorial in Jour. of A.D.A.

The Evaluation and Comparison of Loans, Bursaries, Scholarships, Prizes, Etc.

by J. GESTIE PERKIN, D.D.S., B.Sc. (Dent.), Toronto, Ontario

*Prepared for the Endowments Procurement Committee of the Faculty of Dentistry,
University of Toronto—Applicable to all dental colleges.*

IN ORDER to attract the highest type of student and due to the continual rising costs of dental education in Canada, it is becoming increasingly urgent that more awards be made available to students in the different dental faculties. The stimulus which these awards give will be shown in the scholastic attainments of the students who win or obtain them and also in the overall standards.

Awards are divided into several different types, such as scholarships, bursaries, fellowships, prizes, medals and loans.

A scholarship primarily stresses academic performance and unless otherwise stated the student must earn first-class honours in the examination or examinations upon which the scholarship is based. If the instalments of the scholarship are distributed over more than one year the student must continue to maintain high academic standard at each final examination in order to continue to hold the scholarship. However, the committee of award may consider other factors in each individual case. A scholarship should have a value of at least \$100.00.

A bursary may be awarded to a student upon proof of financial need. The recipient need not necessarily be an honour student, but his marks must be satisfactory. It may be of any value according to the wishes of the donor.

A fellowship is awarded mainly on the scholarship basis and is generally given to enable the Fellow to do graduate work or research in the field for which he shows a special aptitude.

Fellowships should have a value of at least \$500.00.

A prize should always be awarded on basis of scholarship or greatest proficiency and may be of any value up to \$100.00.

A medal or key may be of any value according to its size and also whether it is cast in gold, silver or bronze. It need not carry a cash award and is given entirely on the basis of accomplishment or scholarship.

Loans are disbursed to undergraduate students to aid in defraying tuition fees and the purchase of equipment, books, supplies, etc. The funds for these loans are placed at the disposal of the faculty by a foundation or trust and the student receives the loan for a stated length of time without interest. These loans are a source of great financial help to many students who otherwise would have to terminate their course. It is said that "He who receives a benefit with gratitude, repays the first instalment on his debt" and I am sure these students are very grateful for this source of financial aid.

The different awards mentioned above are dependent either from the receipt of the amount of the annual award from the donor or from income earned on an endowed fund. It is very gratifying to note the tendency toward higher interest rates on government bonds in recent months. This will increase the income on the latter type of award as endowed funds are invested mostly in this type of security.

"It is not how old you are but how you are old that matters."

CANADIAN DENTAL ASSOCIATION

REGULATIONS GOVERNING THE AWARD OF STUDENTSHIPS

1. The Canadian Dental Association through its Research Committee offers financial assistance in the form of "Studentships" to undergraduate or graduate students who have given distinct evidence of capacity for original research (or who have won high distinction in scientific study during their University training) and who desire to prepare themselves further for scientific research and teaching by continuing their study in the sciences fundamental to their research fields.

2. The Studentships are available on equal terms to men and women for the purposes of

- (a) An academic year of special study in the fundamental sciences at a recognized University. Grants will be made on an annual basis and applications for renewal will be considered.
- (b) Consultations with recognized authorities. Applications in this category will be considered only under exceptional circumstances, such as to obtain assistance for occasional attendance at special meetings of research workers or special conferences with workers in the same field.

3. Studentships are awarded to applicants who are deemed best qualified by the evidence submitted. They are not intended to provide opportunities for graduates in dentistry to prepare themselves as specialists in certain fields of dental practice.

4. The age of the applicant and marital status will be important considerations when making an award. Previous training will also be taken into account.

5. Application for a Studentship must be made by the candidate to the Research Committee of the Canadian Dental Association and addressed to this Committee, care of the Secretary, Canadian Dental Association.

6. Application forms are available at the Canadian Dental Association office on request.

7. An applicant shall submit a transcript of his University record together with a statement from his sponsor who may be the Dean of a Dental School or head of a scientific department within a university, showing that, in his estimation, the applicant is worthy of training for scientific dental research.

8. The candidate shall state the institution at which he intends to study and describe specifically the plan of study he intends to pursue. A statement from the head of the institution at which the student intends to take his training, stating the institution's willingness to accept the student, should be submitted.

9. Applications for the ensuing year should be received before the first of May.

10. An applicant is required to make a comprehensive statement regarding his finances. He must state how much extra financial assistance he requires to complete the proposed course of study, how much of the total expense, if any, is covered by salary from the institution where he intends to study and how much by means of personal expenditure, loan, etc. Payments will be made monthly during the period the Studentship is held.

11. All apparatus and materials purchased with grants become the property of the Canadian Dental Association and must be returned to the Canadian Dental Association at the end of the tenure of the Studentship unless a specific release has been provided for, either to the individual or to a specified institution.

12. Part-time teaching in a university department or faculty may be considered favourably during the terms of tenure of the Studentship.

13. Interim reports on the student's progress may be requested from the Dean or head of the department in which the student is working. The Canadian Dental Association reserves the right to discontinue the Studentship after reasonable warning is given the student, if progress reports are unsatisfactory. The final report prepared by the student and supported by the Dean or head of the scientific department, indicating in some detail the results accomplished in the study, must be submitted to complete the tenure of the Studentship.

14. Funds may also be made available at the discretion of the Committee for the publication of scientific articles.

Address all communications to:

The Secretary,
Canadian Dental Association,
234 St. George Street,
Toronto, Ontario.

The Forum

FACTORS AFFECTING THE PHYSICAL AND CHEMICAL PROPERTIES AND CLINICAL BEHAVIOUR OF DENTAL RESINS

by I. C. SCHOONOVER, Washington, D.C., U.S.A.

Given at International Dental Congress. Condensed from International D. Jour.

The widespread use of methyl methacrylate resins and their copolymers for denture bases, artificial teeth, and filling materials has given this group of resins a unique place in dentistry. However, their use has not been entirely devoid of failures.

Dimensional instability and lowering of the strength of a denture are caused by the presence of small amounts of residual monomer resulting from incomplete polymerization. Failure from this source is readily avoided by exercising extreme cleanliness while mixing the resin and packing the flask and by heating the denture for an adequate length of time at the proper temperature.

Dentures become smaller and smaller with each successive heating cycle during rebasing or repairing. This is caused by the differential in coefficient of thermal expansion between the mould material and the resin. The magnitude of this change can be reduced appreciably by repairing or rebasing the denture at lower temperatures for a longer period of time and by cooling the flask to room temperature slowly.

The occlusion of a denture is affected by the expansion or contraction of the resin resulting from a gain or loss of water. Therefore, it is essential that final occlusal adjustments be made only after the denture has been exposed to moisture conditions similar to those encountered in actual service.

Recently artificial teeth prepared from cross-linked polymers have been developed which are less susceptible to crazing because of their resistance to stresses caused by water vapour at elevated temperatures.

"Blushing" is likewise caused by water or water vapour coming in contact with the resin at elevated temperatures and can be eliminated by the use of tinfoil as a mould lining material.

The failure of teeth to bond to the denture base resin is caused by the presence of traces of oils or waxes on the surfaces of the teeth. These traces are not easily detected by visual inspection and cannot be removed by methods of wax elimination commonly employed. Flushing the flask with a solution of one of the modern synthetic detergents will effectively remove these foreign materials and assure satisfactory bonding.

Two of the most serious difficulties encountered in the use of the self-polymerizing acrylic resins as filling materials are their polymerization shrinkage and the difference in the coefficient of thermal expansion between the resin and the teeth. Both of these properties make it difficult to secure good marginal adaptation and adequate sealing of the cavity. Although dimensional changes resulting from these factors cannot be prevented, they can be controlled somewhat by proper manipulation. The shrinkage

resulting from polymerization may be directed into areas where it is least harmful or may be compensated for by the process of adding the material in increments. No adequate method is

known for minimizing the effects resulting from thermal changes and this may prove to be one of the serious drawbacks to the use of these resins as a filling material.

GERIATRICS

by NINA SIMMONDS, Sc.D., Univ. of California Medical Centre, San Francisco, Calif.

Excerpt from Journal of Prosthetic Dentistry, Nov. 1952

As a result of the tremendous advances in medical sciences of the past half century, the proportion of aged persons in the general population has been considerably augmented. An increase of about 15.5 years in life expectancy occurred in the United States between 1900 and 1942. In 1942 the average length of life in this country was about 65 years, an increase of almost one-third since the start of the century. Stieglitz comments: "The aged are here now; there will be many more of them in years to come. Never before in the history of mankind has a like problem arisen; plagues, wars and famines have many times seriously changed the balance of population structure, but never before in the direction of a preponderance of the elderly such as is occurring today.

"The need to learn about the aging is urgent. The apparent boon of great longevity may become a curse, a terrible danger. Long life without health is not only an individual personal tragedy, but a social evil seriously threatening the national economy. Increased longevity with health and useful vigor into senility may be made an incalculably valuable asset to the commonwealth, if the potentialities of the elderly are wisely developed, guided, and utilized. The future course of events, economic destruction, or great enrichment of human life will depend in large measure upon the science and art of medicine. Such is the vast responsibility of geriatric medicine." This physician is probably unaware of the tremendous problems of prosthodontists with this aging and aged population. We may add "Such is the vast

responsibility of geriatric dentistry, which presents problems which are different but undoubtedly as important to the aging and aged as many of those presented by geriatric medicine."

Geriatric medicine is not a sharply defined speciality and it is not limited to the study and treatment of only the senile portion of the population. It is essentially a point of view focusing attention upon the physiologic, structural, chemical, and psychologic changes which unquestionably begin about maturity or even earlier and are part of the aging process. It is concerned with the aging as well as the aged because it is realized that far more can be accomplished for the larger group of senescents than for those fully senile. It has proved practical to assume that geriatric medicine becomes applicable at approximately 40 years of age, for it is at this time that the insidious, progressive disorders so significant in later years become manifest. The actual beginnings of such common and important disorders as arteriosclerosis, hypertensive disease, hypertrophic arthritis, and the like occur far earlier than their signs and symptoms are clinically detectable. In many respects the two decades from about 40 to 60 are the most significant, because in these years of later maturity or early senescence the future health of the individual is in great measure determined. Geriatric medicine, according to Stieglitz, to be fully effective, must be largely preventive medicine. We would suggest that geriatric dentistry to be effective must be largely preventive dentistry.

ANNOUNCEMENTS

● **THE DENTAL COUNCIL OF CANADA ANNUAL EXAMINATIONS**, May 25-30, 1953. All examinations will commence at 9 a.m. May 25, Monday—Prosthodontia; May 26, Tuesday—Preventive Dentistry; May 27, Wednesday—Operative Dentistry; May 27, Thursday—Oral Medicine; May 28, Friday—Dental Surgery and Anaesthesia; May 30, Saturday—Practice Management.

The Oral Examinations will be held at College centres only, at a time convenient to the Oral Examiners.

All forms and fees for Class A should be in this office not later than May 1, 1953.

All forms and fees for Class D should be in this office not later than April 25.

A. J. Brett,
Sec.-Treas. of D.D.C.

● **UNIV. OF TORONTO FACULTY OF DENTISTRY CONTINUATION COURSES** for graduates in dentistry:—**ORTHODONTICS**, April 13-17, under direction of Dr. Robert E. Moyers; **DENTAL ORAL SURGERY AND ANAESTHESIA**, April 27-May 1, under direction of Dr. J. H. Johnson; **PERIODONTICS**, May 4-8, under direction of Drs. H. K. Box and C. H. M. Williams. The fee for all courses will be \$75.00 except the courses on Caries which will be \$30.00.

Apply The Dean, Faculty of Dentistry, Univ. of Toronto, 230 College St., Toronto 2B, Ont.

● **THE FACULTY OF DENTAL SURGERY OF THE UNIVERSITY OF MONTREAL ANNOUNCES A SERIES OF SHORT POST-GRADUATE COURSES** as follows:—Oral Surgery and Anaesthesia—April 20-25, for general practitioners, covering modern techniques of oral surgery, local and general anaesthetics on patients. **Endodontics**—May 4, 11 and 18. This short post-graduate course covers all phases of modern canal treatments and is given on three separate days. **Complete Prosthetics**—April 13-18, covering all phases of prosthesis from impressions to insertion of dentures. Any applicant will be permitted to handle a case of his own. **Pedodontics**—April 20-23, covering "child management," care of the deciduous teeth, care of the young permanent teeth, care of the pulp in the teeth of children, broken teeth and dystrophies, space maintainers, etc. **Diagnosis**—April 13-18, covering Radiology and Treatment Planning. **Periodontics**—April 6-11, covering most common causes of periodontal diseases, their evolution, treatment and prognosis.

For information concerning these courses, enquiries should be addressed to: Dean, Faculty of Dental Surgery, University of Montreal, Postal Box 6128, Montreal 26, P.Q.

● **RESEARCH GRANTS IN DENTISTRY**:—The Associate Committee on Dental Research of the National Research Council of Canada is offering Fellowships for graduates in dentistry to provide advanced training and experience in research in one of the sciences basic to dentistry. Grants-in-Aid are also available for projects related to research in dentistry.

Apply to S. J. Cook, Secretary Associate Committee on Dental Research, National Research Council, Ottawa, Canada.

● Announcement is made of the formation of the **ACADEMY FOR ORAL REHABILITATION OF HANDICAPPED PERSONS**. First meeting to be held in Cleveland in conjunction with A.D.A. Convention. The Academy purposes to encourage and assist dental practitioners to prepare and qualify themselves to treat physically and mentally handicapped persons and to promote research in all branches of the service.

For information apply to Dr. Manuel M. Album, 1930 Chestnut Street, Philadelphia 3, Pa.

● **10th ANNIVERSARY MEETING OF THE AMERICAN INSTITUTE OF DENTAL MEDICINE**, Palm Springs, California, October 25-29. For information apply to the Executive Secretary, 2240 Channing Way, Berkeley 4, California.

● **TEMPLE UNIVERSITY ANNOUNCES A COURSE IN CLINICAL OCCLUSION JUNE 8-10** by Dr. Lewis Fox, South Norwalk, Conn., a course designed to present the fundamentals of occlusion in relation to the physiology and pathology of the periodontal supporting tissues. Tuition \$150.00. Apply to Dr. Louis Herman, Temple University School of Dentistry, 3223 N. Broad Street, Philadelphia 40, Pa.

● **SPECIAL SUMMER POST-GRADUATE COURSES**:—The Department of Denture Prosthesis of NEW YORK UNIVERSITY will offer courses in complete and partial dentures from June 1 through June 12, 1953. These 60-hour courses will consist of lectures, demonstrations and clinical practice.

ANNOUNCEMENTS

● **ANNUAL MEETING CANADIAN DENTAL ASSOCIATION IN COOPERATION WITH THE ANNUAL FALL CLINIC OF THE MONTREAL DENTAL CLUB** under the auspices of the College of Dental Surgeons of the Province of Quebec . . . Montreal, Quebec—October 18, 19, 20 & 21, 1953.

● **NINTH ANNUAL MEETING OF THE NORTHWEST CONFERENCE IN DENTAL MEDICINE**, will meet in the Oak Bay Hotel, Victoria, B.C., Canada, April 19-22. Apply Dr. Gladys Underwood, Selling Bldg., Portland, Oregon.

● **WESTERN CANADA DENTAL SOCIETY**:—Jasper Park Lodge, Alberta, June 14-18. Theme—"Dentistry for the General Practitioner". The executive is going all out to make this a most interesting and colourful convention.

● Latest advances in dental procedures and materials will be among topics for consideration at the 9th **ANNUAL POST-COLLEGE ASSEMBLY**, April 22-23, **OF THE COLLEGE OF DENTISTRY AT OHIO STATE UNIVERSITY**.

● **AMERICAN ACADEMY OF DENTAL MEDICINE ANNUAL MEETING**:— Hotel Shoreham in Washington, D.C., June 26-28. Theme "Nutrition". All members and interested dentists and physicians are cordially invited to attend. Apply National Secretary, Dr. William M. Greenhut, 124 East 84th Street, New York 28, N.Y.

● **75th ANNIVERSARY, UNIVERSITY OF PENNSYLVANIA**, June 10-12, 1953. Dr. LeRoy M. Ennis has been appointed chairman of the Celebration Committee.

The committee is very desirous of receiving messages from Alumni in foreign lands for this occasion. These messages will be placed in the historical record.

● **WORLD CONFERENCE ON ENDODONTICS**, University of Pennsylvania, June 21-27. Among the leading Endodontists who will participate in the Conference are Dr. B. Nygaard Ostby of Norway, Dr. W. Stewart Ross of England, Dr. Francisco Pucci of Uruguay, Dr. George Hare of Canada, as well as a number of prominent physicians. The class will be divided into groups of 15 in the afternoon, to be presided over by a group leader.

An audio-visual program and an endodontic forum have been arranged for several evenings. Tuition fee for the conference \$100. Apply to Postgraduate Courses, School of Dentistry, University of Pennsylvania, 4001 Spruce Street, Philadelphia.

● The annual convention of the **CANADIAN SOCIETY OF DENTISTRY FOR CHILDREN** is to be held on Saturday, May 16, 1953, in Toronto at the Royal York Hotel.

● **THE ONTARIO DENTAL ASSOCIATION** will hold its Annual Convention in the Royal York Hotel, Toronto, on May 17, 18, 19 and 20, 1953.

● **THE FOURTH ANNUAL BERKSHIRE CONFERENCE IN PERIODONTOLOGY AND ORAL PATHOLOGY**:—Tufts College Dental School Postgraduate Division will conduct an advanced conference in Periodontology and Oral Pathology under the direction of Dr. Irving Glickman and staff, at Eastover, a resort hotel in Lenox, Massachusetts, June 14-18, 1953. The conference will consist of four days of lectures, seminars, and panel discussions regarding clinical problems by outstanding teachers and clinicians in dentistry, medicine, and their related fields.

For further information write Berkshire Conference, Tufts College Dental School, 136 Harrison Avenue, Boston 11, Mass.

● **AMERICAN DENTAL SOCIETY OF EUROPE**, Annual Meeting in Bergen, Norway. August 4-7, 1953, Hon. Secretary, F. Douglas Derrick, 140 Park Lane, London, W.1.

● The **MARITIME DENTAL CONVENTION** is to be held at Keltic Lodge, Ingonish Beach, Sept. 3-5, 1953.

● **AMERICAN DENTAL ASSOCIATION CONVENTION** at Cleveland, Ohio, September 28 to October 1.



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Editorial

GROUP PRACTICE

In last month's journal we discussed editorially "Group Practice," outlining some of the advantages and suggesting at least one method of starting such a group. At this time we would delve deeper into some of the phases of this ideal method of practising dentistry.

In the article just referred to we stated that if a well-established group failed it would be due to jealousies from within, not from attacks from without. In the Song of Solomon we read, "Jealousy is cruel as the grave." In Shakespeare's Othello we read, "O, beware my Lord of jealousy! It is the green-eyed monster which doth mock the meat it feeds on." Another writer has said, "Jealousy kills like the fire-damp from a neglected mine."

Wives must not be overlooked in developing a group practice. This is one of the keys of a successful group. Happy is the group whose members have wives who share their husband's professional interests fully enough to join happily and intelligently in their activities, who accompany them to conventions, who are anxious to meet their friends and make them theirs. How different the wife who seeing the spouse of her husband's partner wearing a mink coat which she covets but feels she cannot afford, stirs up discord at home and eventually, by constant nagging and unwise suggestion, produces a rift in the partnership. It is important, therefore, in the early stages of developing a group to see that the wives are reasonably compatible. A good wife can help her husband as much as a poor one can hurt him. When a man gets frustrated at the office he should be able to come home to calmness and be able to relax, which calls for more than good housekeeping. For a long time business has been aware that wives of executives play a great role. Before employing an executive many companies make wife-screening a regular practice and many others seem ready to do so. When you take in a partner, you take in a family. When you see a lovely home and a poor office, the woman dominates. A good wife is the one who subordinates her

own aspirations to the smooth functioning of the group; a dedicated purpose to make things go.

Of course jealousy is not confined to wives by any means. It may appear among the partners themselves. The ill-adapted man in any group is the one who is content with everything as it is. Of course real advances are going to bring individuals into conflict with the status quo. A partner may envy his more progressive partner. Then again, one man though he be comparatively an inferior operator may by his winsome personality attract patients like honey attracts the bee. To have a patient who has been in the habit of going to Dr. A. request service from Dr. B. sometimes leads to jealousy. The answer is for Dr. A. to build up his personality. A common cause of jealousy is for Dr. A. to conclude that he works longer hours and renders much greater service than his associates yet receives the same remuneration or less. This is, perhaps, the most difficult problem to solve but it can be, and should be, solved by common agreement of the partners. One man may be working longer hours and taking fewer holidays. He may be engaged in a more remunerative type of service. On the other hand he may not attract nearly as many patients to the office or attend conventions as faithfully, or take post-graduate courses, and all of these conditions must be taken into consideration. It is also of paramount importance to know just how much each man earns for the practice, which is quite easily done. In the group to which the writer has belonged for many years, there is one chart for each patient upon which all service charges by any of the partners are entered and initialled. These fees are later entered into the Day Book in the column allotted to each operator. Expenses in which all are involved are segregated in one column and divided equally at the end of the month. Individual expenses are entered in the column allotted to the man incurring the same. In this way it is quite easy to determine just what the net profit is for each operator at the end of each month, based on the amount of service rendered. All accounts on which nothing has been paid during the past year are written off against the operator who rendered the service and credited to him later if paid. Consequently the yearly report presents a more accurate picture than the monthly report.

It is the opinion of this writer that remuneration in a group should be based, to a considerable extent, upon the financial results as determined in the above manner, at the same time taking into consideration the other matters which have been mentioned. When a group is formed it can be decided to pay each participant a certain monthly salary and a percentage of what is left. These percentages may possibly remain constant and the salaries adjusted, say, once a year or oftener, depending on necessity.

A legal partnership presents problems which should be carefully considered. For instance, a partner does not want to find himself involved in a \$100,000 court case because a fellow partner has killed a few people in an automobile accident. For this reason, insurance should be insisted upon to take care of accidents, ethics, negligence, etc.

The late Dr. Hinman who for many years headed up a successful dental group in Atlanta, Georgia, believed that there should be a "daddy" in every group. By this method the members have a written agreement but from a legal standpoint, are hired by the "daddy." However, in actual practice clinic policies are determined by the members of the group as a whole, the same as though a legal partnership agreement had been signed and each member draws a salary and percentage as would be the case in a legal partnership. In this way one avoids all the pitfalls of a legal partnership and has many advantages in the case of a medium-sized group.

As to the economies resulting from group practice it is interesting to note that the relationship of expenses to fees charged in our group for the last year was

41 per cent, which is much below the average for private practice. Furthermore, this ratio would be definitely better were it not for the fact that this writer spends so much time in editing this journal and at present all partners are in the advanced age group. For many years this ratio was kept around 34 per cent.

Provision should be made in the agreement for the resignation or death of a member of the group. When this occurs there is a great loss to the group and for this reason the terms of settlement should favour those who remain. The outstanding accounts can be liberally discounted, say, by 35 per cent, and the resigning partner's share in the balance of these accounts and his share in equipment, be paid to him or his estate, say 25 per cent in a month and the balance in six months. A reserve fund should be carried to meet at least a part of such payments.

Some men should never consider joining a group. These are they who cannot easily compromise; those who find it difficult to cooperate; those who are looking for an easy berth; those who object to having their work scrutinized by their fellows; and one who cannot subordinate his own ideas to the will of the majority.

Men with ability, good education, pleasing personality and appearance, having a zest for work and, above all, compatibility, are required for group practice. Granting these requirements, group practice offers very many wonderful opportunities not to be had in independent practice.

M. H. G.

BOOK REVIEWS

Physiology for Dental Students, by D. J. Anderson, M.Sc., B.D.S.; 344 Pages. Published by Edward Arnold & Co., London, England.

As the title implies, "Physiology for Dental Students" is intended as a textbook for students in dentistry. The author in his preface points out that there is no "special" dental physiology, and states that "The dental student requires a general picture of the living organism working as a whole and should examine in great detail only those aspects of physiology of particular relevance to his future work. In this book an attempt is made to present a balanced account of physiology using as a foundation Claude Bernard's famous phrase, 'La fixité du milieu intérieur est la condition de la vie libre'."

The book is successful in giving an outline of physiology. The statements are brief and the condensations are, for the most part, masterly. The subject matter is arranged on a "functional" basis in five parts: the internal environment, the constancy of the internal environment, relationships with the external environment, reproduction and studies in physiological integration. While the book as a whole deals with the well-worn subjects of physiological study, such chapters as that on

calcium and phosphorus metabolism should be of particular interest to dental students.

On the other hand one might question the condensation as being pushed too far, giving "predigested matter" without laying a sufficiently firm basis upon which the developing ideas and knowledge of the student can be built. The emphasis on the functional basis, evident in the arrangement of the subject matter, may encourage teleological reasoning, and may not foster the analytical approach. The arrangement of the book made it a little difficult for this reviewer to look up related subject matter.

J. Campbell

Dept. Physiology, Univ. Toronto

Dental Anatomy including Anatomy of the Head and Neck by Moses Diamond, D.D.S., late Professor of Dental Anatomy, Columbia University College of Physicians and Surgeons and School of Dental and Oral Surgery. Third Edition. 471 Pages. 172 Illustrations. Published by the Macmillan Company of Canada. Price \$15.00.

The author refers to the integration of dentistry and medicine on an educational basis and expresses the hope that this book will serve to contribute to the new orientation.

The text includes the research findings of the last two decades. The following subjects are dealt with: Comparative Dental Morphology; Development of the Teeth; Formation and Calcification of Hard Tissues; Tooth Tissues; Eruption; Deciduous Teeth; Maxillary and Mandibular Teeth; Technique for Reproducing Basic Tooth Forms; Variations and Anomalies; Arrangement of Teeth and Occlusion; Supporting Tissues of the Teeth; Pulp

Chamber and the Pulp Canals; Muscles of the Head and Neck; Oral Cavity and Its Soft Tissues; Vascular and Nervous Systems; Temporomandibular Articulation, and the Growth and Development of the Skull. Some of these studies are being published for the first time.

The book is beautifully printed on coated paper and the illustrations are excellent and should prove very valuable to the reader.

M. H. G.

ROYAL CANADIAN DENTAL CORPS NEWS

Lieutenant General Charles Foulkes, C.B., C.B.E., D.S.O., C.D., Chairman, Chiefs of Staff, was the guest speaker at an R.C.D.C. mess dinner held in Ottawa on January 19, during the Unit Commanders' conference. Fifty-five dental officers attended this dinner.

Lieutenant-Colonel I. A. L. Millar has been appointed Officer Commanding No. 27 Canadian Field Dental Unit and is now in Germany.

The promotion of Captain A. R. Ramsay to the rank of Major has been announced. Major Ramsay, 41, was born and received his early education in Neepawa, Manitoba, and later attended the Manitoba Normal School graduating in 1931. After serving five years with the R.C.A.F. during the Second World War,

Major Ramsay enrolled at McGill University. He was appointed 2nd Lieutenant in the R.C.D.C. in September, 1948, and following his graduation was promoted Captain in July 1949. Major Ramsay, who is married with one son, is stationed at Longue Pointe, Quebec.

Captain J. C. Brick is the first Dental Officer to be attached to the R.C.A.F. Air Division in France.

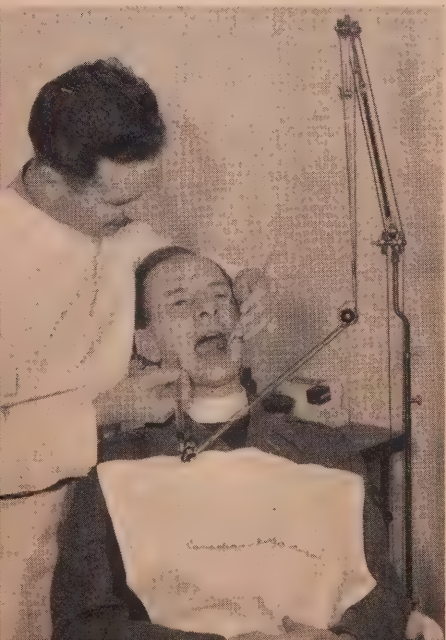
The Unit Commanders' Conference R.C.D.C. was held in Ottawa during the week commencing January 19. The following members of the Reserve Force Advisory Staff also attended: Colonel J. F. Edgecombe, O.B.E., E.D., Saint John, N.B.; Colonel L. E. Kent, M.B.E., Lachine, Que.; Colonel C. L. Strachan, E.D., London, Ont.; Colonel J. P. Whyte, E.D., Swift Current, Sask., and Colonel W. E. Addinell, Edmonton, Alta.

Major H. W. Hart, a member of the Instructional Staff of the R.C.D.C. School, is attending a six months' Specialized Course in Prosthodontia at the U.S. Naval Dental School, National Naval Medical Centre, Bethesda, Maryland.

The Continuation Course in Dental Radiology to be held at the University of Toronto, February 23-27, will be attended by Majors R. H. G. Cunningham and A. R. Ramsay.

WITH No. 27 CANADIAN FIELD DENTAL UNIT IN GERMANY

Giving his brother a dental examination is Captain J. A. A. Patenaude, Valleyfield, Quebec, dental officer with 1st Canadian Rifle Battalion at Hanover, Germany. In the chair is Captain Paul Patenaude, Royal Canadian Army Chaplain Corps (R.C.) also of Valleyfield, Padre to Canadian troops at Stonebenge Barracks, Hanover. The brother combination is well known among Canadian troops in Germany.



CANADIAN DENTAL ASSOCIATION NEWS

FROM THE OFFICE OF THE SECRETARY

The Dental Technician Situation in British Columbia:—"A little knowledge is a dangerous thing," might aptly express the situation of the unethical laboratory technician. As an opportunist, he is trying, for his own purpose and ends, to encroach on the established and rightful position of dentistry as one of the important health services.

The situation in the different provinces varies in degree but nevertheless is present. In Alberta it has reached the stage where a technician is permitted, under the Public Health Act, wide powers of association with the dentist and dealing with the public.

As an aftermath of the war and post-war period there has appeared in British Columbia a group of unethical ("boot-

leg") technicians who for their own purposes have contravened the Dentistry Act by taking impressions for dentures and dealing direct with the public. Now, gaining a certain amount of experience by this means, by misrepresenting their abilities and magnifying the so-called high fees charged by the dentist as well as the "pittance" paid by the dentist to the technician, they seek to have the Dentistry Act changed to legalize practices they have followed out of the law. The technicians in British Columbia lean heavily on what has already been accomplished in Alberta and indicate they even want to go further. A certain section of the public is always gullible to this approach.

The changing picture of politics in

The Salaried Professional Man:—The following table is compiled from the 1951 census in respect to professional men on a salary basis of payment. It will be noted that 74.5% of judges and magis-

trates; 58.6% of actuaries and 56.1% of dentists receive over \$4,000 per annum. The other professions enumerated have a smaller percentage with salaries over \$4,000.

	Total Wage-earners		Earnings \$4,000 +		% of total Earnings over \$4,000	
	M.	F.	M.	F.	M.	F.
Professional.....	178,467	161,281	37,376	1,328	20.9	0.8
Accountants, auditors.....	29,354	1,525	6,561	81	22.4	5.3
Actuaries.....	220	14	129	2	58.6	14.3
Agricultural professionals (n.e.s.).....	2,536	100	376	3	14.8	3.0
Architects.....	1,070	34	443	2	41.4	5.9
Artists, commercial.....	2,378	588	385	13	16.2	2.2
Artists, excl. commercial art teachers.....	367	345	56	10	15.3	2.9
Authors, editors, journalists.....	5,127	1,471	1,435	65	28.0	4.4
Brothers, nuns (n.e.s.).....	1,449	10,559	2	1	...	...
Chemists, metallurgists.....	7,612	872	1,704	14	22.4	1.6
Clergymen, priests.....	15,825	272	330	...	2.1	...
Dentists.....	321	36	180	2	56.1	5.6
Dietitians.....	...	1,091	...	27	...	2.5
Draughtsmen, designers.....	12,242	619	1,058	5	8.6	0.8
Engineers, chemical.....	2,435	3	1,136	...	46.7	...
Engineers, civil.....	7,297	...	3,016	...	41.3	...
Engineers, electrical.....	6,245	11	2,701	1	43.3	9.1
Engineers, mechanical.....	8,167	9	3,390	1	41.5	11.1
Engineers, mining.....	1,918	...	939	...	49.0	...
Judges, magistrates.....	592	5	441	...	74.5	...
Lab. technicians (n.e.s.).....	8,864	5,443	285	9	3.2	0.2
Lawyers, notaries.....	2,327	100	1,118	15	48.0	15.0
Librarians.....	274	1,786	40	23	14.6	1.3
Musicians, music teachers.....	2,252	2,454	302	22	13.4	0.9
Nurses—graduate.....	868	34,261	3	48	0.3	0.1
Nurses-in-training.....	42	15,581	...	...	...	...
Osteopaths, chiropractors.....	25	10	5	...	20.0	...
Physicians, surgeons.....	4,197	398	2,006	66	47.8	16.6
Professors.....	4,610	812	1,421	66	30.8	8.1
Religious workers (n.e.s.).....	1,131	1,305	9	...	...	...
Social Welfare workers (n.e.s.).....	1,470	2,524	112	25	7.6	1.0
Statisticians.....	618	124	314	8	31.4	6.5
Surveyors.....	4,116	21	194	...	7.6	...
Teachers, school.....	27,931	73,709	3,908	729	14.0	1.0
Teachers, instructors (n.e.s.).....	1,002	1,410	67	3	6.7	0.2
Veterinarians.....	533	15	209	...	39.2	...
Other.....	11,559	3,501	2,996	84	25.9	2.4
Photographers.....	1,493	273	105	3	7.0	1.1

British Columbia has given these men the feeling that they stand a good chance of having the Dentistry Act changed to suit their own purposes.

The Council of the College of Dental Surgeons of British Columbia and the profession are doing all in their power to see that the situation is put in its proper light by informing the members of the legislature in an intelligent manner of the true facts of the case.

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Recognition to President Ratté:—At the recent centennial celebration of Laval University President Ratté, in addition to making a presentation on behalf of the Canadian Dental Association which was reported earlier, acted as a member of the organizing committee. Dr. Ratté is an Arts graduate of Laval. For his work in connection with the celebration he has been awarded the Papal Medal. The award was made by His Excellency Monseigneur Maurice Roy, Archbishop of Quebec, at an evening ceremony on December 23 last. This distinguishing honour, which has been bestowed on our President, is reflected upon the profession as a whole.

•
British Columbia Licenses First Hygienist:—Under the amendment in the dental act of British Columbia last year, Mrs. Norma Bell became the first licensed dental hygienist in B.C. Mrs. Bell graduated from the dental hygienist's course at University of Oregon and recently was successful in passing the licensing examination of the British Columbia College of Dental Surgeons.

■
The Fluoridation of Communal Water Supplies for the Partial Prevention of Tooth Decay: In response to many requests for information the following statement dealing with the public health procedure of fluoridation of communal water supplies has been prepared by a joint committee of the Canadian Dental Association and Canadian Medical Association.

What is Fluoridation? The word "fluoridation," as here used, means the addition of a fluoride compound to water. Some water supplies are naturally fluoridated from the soil and rock through which they pass. Since 1945 many communities have artificially raised the fluoride content of their water supply to about one part per million (p.p.m.) by the addition of a fluoride compound. This is a level at which optimal dental benefits can be expected, and at which no detrimental effects have been demonstrated.

What Can Fluoridation Accomplish? It has been found that children residing

in communities with a water supply brought in 1945 to 1 p.p.m. of fluoride have considerably less decay in their teeth than children whose water supply is practically free of fluoride. While it is known that the protection from caries conferred by naturally fluoridated water carries over into adult years, sufficient time has not yet elapsed in connection with artificially fluoridated waters to state definitely the extent of adult protection.

What Does Fluoridation Cost? Fluoridation is accomplished by means of a mechanical feeding device, usually automatic, operating in conjunction with the regular waterworks equipment. Accurately measured quantities of some fluoride are mixed into the water supply, under the supervision of qualified water works staff.

Cost of equipment, of fluorides, and the operating costs vary from place to place, and from time to time. It is suggested that estimates be obtained through the local waterworks engineer or from supplying firms.

What Hazard is Involved? None of the evidence reported to date indicates any ill effects when the concentration of fluoride in water is about 1 to 1.2 p.p.m. From naturally fluoridated areas it has been found that at about 1.5 p.p.m. some children develop teeth with mild mottling or mild fluorosis, commonly detectable only by experienced observers.

Under most circumstances, the greater part of the fluoride intake comes from drinking water and relatively small amounts from other sources such as food. But this is not always true. Some foods contain considerable quantities of fluoride. Fluoride intake may be increased by the use of materials to which fluoride has been added such as tablets, lozenges, dentifrices or chewing gum. Exposures to fluorides may occur not only within certain industries but also in their neighbourhood. In planning the fluoridation of a communal water supply, consideration must be given to sources of fluoride other than water, and steps must be taken to ensure that the fluoride intake from such sources is not excessive.

Since there are many unanswered questions involved in fluoridation of water supplies, investigations are continuing in both the dental and medical fields.

How to Go About It:—Communities considering water fluoridation should, as a first step, discuss the subject with the local dental, medical and waterworks authorities. There are several important matters of planning to be settled for each community individually.

Among these matters is a scientifically reliable basis for judging the effects of the program in the reports that are regular responsibilities of community health groups.

List of Joint Committee Members:

- Dr. J. B. Macdonald, Faculty of Dentistry, University of Toronto, Toronto—Chairman
- Dr. E. H. Bensley, Montreal General Hospital, Montreal—Vice-Chairman
- Dr. H. K. Brown, Dental Health Division, Department of National Health and Welfare, Ottawa
- Dr. Malcolm Brown, Kingston General Hospital, Kingston
- Dr. A. L. Chute, Hospital for Sick Children, University Avenue, Toronto.
- Dr. R. Grainger, Department of Public Health, Parliament Bldgs., Toronto.
- Dr. Gordon Nikiforuk, Faculty of Dentistry, University of Toronto, Toronto
- Dr. L. B. Pett, Nutrition Division, Department of National Health and Welfare, Ottawa

Note: Membership on this committee does not constitute an endorsement of the statement by the department or institution which the individual represents.

Research: — In a recent article in *SCIENCE*, entitled "Dangers Confronting American Science," there is discussed some of the conditions for progress in the overall field of science. Initially, "scientific work must be in the public domain, freely published, taught, and criticized." This means that free scientific discussion even on an international level must be available to all and remain unfettered so that the exchange of ideas and opinions is easy. Secondly, "scientists must not be hedged about with restrictions on personal freedom." This freedom of thought and communication in the world of science is undergoing a growing repression through fear, fear of their harbouring secret agents in scientific research devoted to realms of scientific endeavour. Third and lastly, "science must be supported as a public responsibility for the public welfare, whether immediate or ultimate." This statement is aimed at the growing concentration of scientific attention on projects backed by large sums of money. It has been stated, especially in the broad field of medical research, that donors are demanding more sensational successes, and these with little delay, and yet failing to recognize the tedious ground work and pilot studies that are the forerunners of these spectacular discoveries.

tional guidance purposes has been prepared with an accompanying manual. The purpose of this film is to assist those giving addresses to secondary school students upon the subject of dentistry as a career.

The subject matter of this film and manual was prepared by a special committee of the Dental Alumni Association, University of Toronto, and generously presented to the Canadian Dental Association. The C.D.A. has now published this film and manual. Through these media the speaker is provided with excellent resources for such addresses.

Copies of this film are available at a cost of two dollars and fifty cents (\$2.50) each which includes a copy of the manual and handling charges. Order should be addressed directly as follows:

Associated Screen News,
108 Peter St.,
Toronto 1, Ontario.

January/53.

Additions to the Library:

- ASSOCIAZIONE MEDICI DENTISTI ITALIANI—SOCIETA ITALIANA DI STOMATOLOGIA. —XXVI Congresso Italiano di Stomatologia. 1951. 229 p. illus.
- BAILEY, H., and LOVE, R. J. McNEIL —A short practice of surgery. 9th ed. 1952. 1254 p. illus.
- BERRIEN, F. K.—Practical psychology. Rev. ed. 1952. 640 p. illus.
- BEST, C. H., and TAYLOR, N. B.—The living body. A text in human physiology. 3rd ed. 1952. 972 p. illus.
- BRASH, J. C.—Cunningham's manual of practical anatomy rev. and ed. by James Couper Brash. 11th ed. Vol. 111—Head and Neck: Brain. 1948 513 p. illus.
- BRASH, J. C.—Cunningham's text-book of anatomy, edited by James Couper Brash. 9th ed. 1951. 160 p. illus.
- BRYAN, A. H., and BRYAN, C. G. —Principles and practice of bacteriology. 4th ed. 1951. 410 p. illus.
- BECKS, H.—Nutrition as applied to the practice of dentistry. 1950. 130 pp.
- BIBBY, C.—Health education. A guide to principles and practice. 1951. 222 pp.
- BROWN, R. W.—Dr. Howe and the For-syth Infirmary. 1952. 188 pp. illus.
- CARTWRIGHT, F. F.—The English Pioneers of anaesthesia. 1952. 338 p. illus.
- COMITE NATIONAL D'HYGIENE BUCCO-DENTAIRE — Hygiene et soins bucco-dentaires durant la periode pre-scolaire 1952. 472 p. illus.
- COUNCIL OF THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN —The British Pharmaceutical Codex. 1949. 1562 p.

Strip Film Entitled "Careers in Canadian Dentistry":—A strip film for voca-

- CHAYES, H. E. S.—Cavity preparation. 1937. 87 pp. illus.
- COLYER, F.—Old instruments used for extracting teeth. 1952. 245 pp. illus.
- ELLIS, E. W.—The classification and treatment of injuries to the teeth of children. 3rd ed. 1952. 248 p. illus.
- FEDERAL SECURITY AGENCY—U.S. PUBLIC HEALTH SERVICE—Environment and health. 1951. 152 p. illus.
- FISH, E. W.—Parodontal Disease. 2nd ed, fully rev. and much extended. 1952. 252 p. illus.
- GOLDSCHMIDT, R. B.—Understanding heredity. An introduction to genetics. 1952. 228 pp.
- GEFFEN, D. H., and TRACY, S.—Hygiene, infectious diseases and dietetics. 1952. 276 p.
- JAMIESON, E. B.—A companion to manuals of practical anatomy. 7th ed. 1950. 736 p.
- KEENE, M. F. LUCAS and WHILLIS, J.—Anatomy for dental students. 1950. 342 p. illus.
- KLEINER, I. S.—Human biochemistry. 3rd ed. 1951. 695 p. illus.
- NEVIN, M.—Problems in dental local anaesthesia. 1952. 760 p. illus.
- ROSS, J. S.—The National Health Service in Great Britain. An historical and descriptive study. 1952. 398 p.

NEWS FROM THE PROVINCES

SASKATCHEWAN

Total number of beneficiaries covered by payments of the 1953 **Saskatchewan Hospitalization Tax** reported up to November 29—the deadline date for the full year's coverage—was 44,000 more than the same time a year ago.

—Saskatchewan News

MANITOBA

The annual election of three members of the **Manitoba Dental Association** to the Board of Directors for a two-year term resulted in the re-election of Dr. J. M. Grahame and Dr. W. J. Riley, both of Winnipeg. Dr. J. M. Williams of Hamiota was the third man elected. Dr. Williams replaces Dr. L. A. McLean of Minnedosa.

Dr. Riley is now President of the Board, Dr. J. M. Grahame is immediate Past President and Dr. C. S. Robertson is Vice-President. These gentlemen along with Dr. J. Gordon Elsey and Dr. Jos. Rumberg comprise the Board for the current year. Dr. J. F. Morrison was again appointed Registrar and Secretary-Treasurer.

J. F. M.

The January full-day meeting of the **Winnipeg Dental Society** was held on the 19th with Dr. Raymond F. Garvey of St. Paul, Minnesota, presenting the clinic.

Dr. Garvey started his clinic by giving a paper on "Hydrocolloid Procedures in Restorative Dentistry." He discussed the history and use of hydrocolloids and their comparison to the alginates. He spent some time on the problem of tissue retraction, the biggest problem in using hydrocolloids for impressions in inlay, crown and bridge work.

Dr. Garvey gave the following rules

for successful use of hydrocolloids in restorative dentistry:

1. Proper equipment.
2. Minimum of undercuts in preparations.
3. Adequate and careful exposure of all margins.
4. Have preparations dry and free from haemorrhage.
5. Have materials in tray at a proper consistency.
6. Have preparations well centred in impressions and hold the impression tray absolutely still.
7. Chill impression for five minutes by the clock.
8. Remove impression with quick snap.
9. Pour dies immediately after removal of impression. If storage is necessary, store no longer than 15 minutes in 2% pot. sulphate solution.

A film by Dr. Grainger of Mount Vernon, New York, coloured slides of practical cases from Dr. Garvey's office and several hours of table clinics by Dr. Garvey and one of his technicians, completed this well-attended clinic.

T. J. C.

ONTARIO

Members of the **Faculty of Dentistry Staff, University of Toronto**, have completed invitation engagements as follows:—

Dean R. G. Ellis at Akron on February 2.

Dr. W. G. McIntosh at Medical Refresher Course on "Gastro-Intestinal Diseases" at Sunnybrook Hospital, Toronto, on February 2—Subject—Teeth and Digestion.

Dr. C. H. M. Williams participated in College of Dentistry, University of Illinois Telephone Extension Lectures on February 9.

Dr. W. G. McIntosh addressed a meeting under the auspices of University of Illinois in Chicago on February 12. His subject was the "Practical Approach to the Periodontal Problem."

Dr. Waldemar A. Link of Chicago was guest speaker before members of the **Academy of Dentistry, Toronto**, on February 18. Dr. Link's subject was "The Amalgam Problem in Operative Dentistry." He had many good suggestions or perhaps reminders would be a better way of expressing the gist of his remarks. There was very little new in his presentation but he did emphasize a lot of little things that make for a better amalgam restoration.

Some of his points were: Do not touch the amalgam with your hands at any time during the mixing or insertion process. Amalgam can be mixed in the mortar by hand but it can be mixed better in the mechanical mixer; however it is mixed it should be well amalgamated with the mercury. In cavity preparation there should be no bevel at the cavo-surface angle, and retention should not be cut with small inverted cone burs; bevel the gingival seat of proximal occlusal cavities away from the cavo-surface angle. In packing the amalgam use a smooth plugger, small enough to force amalgam into retentive points and changing to larger pluggers as the cavity becomes filled. Use more force in packing with the larger plugger. Do not burnish amalgam as it weakens the margins of the filling.

Dr. Link was very practical in his suggestions and had a very pleasing way of presenting them.

This meeting of the Academy was the Annual Past President's night. Some 20 past presidents of the Society had dinner with the Council and then proceeded to Osler Hall.

It was a good meeting.

The **New Slate** of officers for the **Academy of Dentistry, Toronto**, is as follows: Past Pres., Dr. Gordon Chalmers; Pres., Dr. Elmer F. Henderson; Pres-elect, Dr. W. J. Smith; Sec'y., Dr. J. Beverley King; Treas., Dr. Harvey Milburn.

Council: East, Dr. W. A. Weir; North, Dr. W. J. Dunn; West, Dr. Ralph S. Harris; Central, Dr. F. T. Pearson; Downtown, Dr. R. W. Marshall.

The Ladies' Auxiliary to the **Hamilton Dental Association** held a "Talent Tea" at the home of Mrs. W. J. McEwen on February 5. The occasion was to raise funds towards the Auxiliary's project, that of providing equipment for the den-

tal clinic at the New Nora-Francis Henderson Memorial Hospital.

President Mrs. A. H. Leckie received the guests. The tea table was presided over by Mrs. H. M. Morrow and Mrs. G. W. Foster. Other ladies assisting were Mrs. P. T. Smylski, Mrs. N. L. Robinson, Mrs. J. E. Newell, Mrs. S. C. Jackson, Mrs. D. E. Shultis, Mrs. D. S. Moore and Mrs. J. G. Countryman.

Mrs. R. W. Hoffman was convener of the tea.

During the afternoon a cheque for \$300.00 was presented to Dr. John B. Neilson, Medical Superintendent of the General Hospital, and Dr. G. M. Jackson, the latter representing Dr. Carl Moyle who is in charge of Dental services.

At the annual meeting of the **Thunder Bay Dental Society** held January 10, the following officers were elected:—President, Dr. L. E. Hastings, Fort William; Vice-President, Dr. A. B. Kaukinen, Port Arthur; Sec.-Treas., Dr. C. A. Shaffer, Fort William.

QUEBEC

College of Dental Surgeons of the Province of Quebec: At the election of the College of Dental Surgeons of the Province of Quebec, held on October 27, 1952, the following governors were elected by acclamation, for a four-year term, to represent the divisions, universities and dental societies as follows:

MONTREAL EAST

Drs. C. Archambault, J. R. Brossard, H. Brouillet, L. Deslauriers, V. Dubé, J. A. Fortier, J. P. Lachapelle, Lorenzo Picard, A. Surprenant and E. Vinet.

MONTREAL WEST

Drs. G. G. Armitage, W. E. Charland, M. J. Donigan, E. S. Dorion, M. Goldenberg, L. E. Kent, O. A. Lefebvre and N. Solomon.

QUEBEC

Drs. L. P. Goulet, R. Langlois, D. V. Plamondon and G. Ratté.

THREE RIVERS

Drs. C. Godin and L. Lacoursière.

ST. FRANCIS

Drs. R. M. LeBlanc and L. Letendre.

UNIVERSITY OF MONTREAL

Drs. E. Charron and P. Geoffrion.

McGILL UNIVERSITY

Drs. D. P. Mowry and A. G. Racey.

"SOCIETE DENTAIRE DE MONTREAL, INC."

Dr. J. G. Lajole.

"SOCIETE DENTAIRE DES TROIS-RIVIERES ENRG."

Dr. E. Dansereau.

"SOCIETE DE STOMATOLOGIE DE QUEBEC"

Dr. J. Hamel.

MONTREAL DENTAL CLUB

Dr. J. W. Abraham.

MOUNT ROYAL DENTAL SOCIETY

Dr. C. Finklestein.

These governors compose the Provincial Board of Dental Surgery which, at its first meeting, held on November 21, 1952, elected its executive and its different committees.

EXECUTIVE COUNCIL

Dr. J. W. Abraham—President.
Dr. D. V. Plamondon—1st Vice-President.
Dr. V. Dubé—2nd Vice-President.
Dr. Denis Forest—Registrar.
Dr. E. Vinet—Retiring President.
Drs. C. Archambault, C. G. Armitage, J. A. Fortier and A. Surprenant, councillors.

COUNCIL ON DISCIPLINE

Dr. C. G. Armitage—President.
Drs. C. Archambault and J. A. Fortier, councillors.

CONSULTATION COMMITTEE

Drs. E. Charron and D. P. Mowry.

COMMITTEE FOR SUPPRESSING ILLEGAL PRACTICE

Dr. E. Vinet—President.
Drs. J. R. Brossard, W. E. Charland, E. Dandreaux, L. Deslauriers, V. Dubé, C. Finklestein, C. Godin, L. P. Goulet, J. P. Lachapelle, L. Lacoursière, R. M. LeBlanc, Lorenzo Picard and G. Ratté, commissioners.

CANADIAN DENTAL ASSOCIATION

Drs. A. G. Racey and G. Ratté, representatives; J. A. Fortier and C. A. E. McCabe, substitutes.

COMMISSION OF EXAMINERS

Dr. A. Surprenant—President.
Drs. G. G. Armitage, J. R. Brossard, W. E. Charland, C. de Grandmont, C. Godin, J. M. Gosselin, Y. Lafleur, O. A. Lefebvre, D. V. Plamondon, G. Ratté and E. Vinet, commissioners.

LEGISLATION COMMITTEE

Dr. C. Archambault—President.
Dr. A. Surprenant—Vice-President.
Drs. G. G. Armitage, J. R. Brossard, J. A. Fortier and G. Ratté, commissioners.

DENTAL PUBLIC HEALTH COMMITTEE

Dr. C. Archambault—President.
Drs. E. Charron, V. Dubé, J. A. Fortier, C. A. E. McCabe, D. P. Mowry, G. Ratté, N. Solomon and A. Surprenant, commissioners.

FINANCE COMMITTEE

Dr. J. R. Brossard—President.
Drs. H. Brouillet, W. E. Charland, J. A. Fortier, J. G. Lajole and N. Solomon, commissioners.

PEDAGOGY COMMITTEE

ASSOCIATION OF DENTAL TECHNICIANS OF THE PROVINCE OF QUEBEC

Drs. V. Dubé, J. P. Lachapelle, A. L'Archevêque and A. G. Racey.

PUBLIC RELATIONS COMMITTEE

Dr. E. S. Dorion—President.

HEALTH INSURANCE STUDIES COMMITTEE

Dr. R. Langlois—President.
Drs. E. S. Dorion, J. Hamel, C. A. E. McCabe and N. Solomon, commissioners.

SPECIALISTS AND SPECIALIZATION STUDIES COMMITTEE

Dr. C. Archambault—President.
Drs. M. L. Donigan, V. Dubé, P. Geoffrion, A. W. Mitchell, A. G. Racey and A. Raymond, commissioners.

The President and the Registrar of the College are ex-officio members of every committee or commission.

26, in the Queen's Hotel. Over 100 members of the Club were present as Past President N. L. Martin handed over the affairs of the Club to newly elected President M. L. Donigan.

In his remarks on accepting office, Dr. Donigan expressed his pleasure with the slate of executive officers chosen to assist him in this year of the C.D.A. meeting in Montreal. He was encouraged by the cooperation of clinicians and others who had already been approached regarding the convention next fall and also with the manner in which the plans had progressed thus far with the aid of the other local clubs.

Since he is also Chairman of the Committee in charge of arrangements for the C.D.A. meeting, President Donigan warned that these duties would necessitate delegating some of the presidential responsibilities to other members of the Club's executive and others, in order that he might give full attention to the preparations for the meeting. He then took the opportunity of thanking Past President Martin, Drs. Lamb, Dorion, Mussells and MacDonald who had taken over some of the Vice-Presidential duties during the past year while he was concerned with the chairmanship of the 28th Fall Clinic. In a separate report, Dr. Donigan stated that this had been a success in every way, including the financial.

Club Archivist, Dr. C. C. Bourne, announced that in the past year, four members, Drs. A. L. Walsh, A. G. Racey, A. W. McLelland and J. W. Abraham had been made Fellows of the International College of Dentists.

The report from the representative of the College of Dental Surgeons of the Province of Quebec was given by Dr. Abraham who mentioned the work being done towards the formation of a National Examining Board and reviewed the problem of illegal practice. In spite of the large amounts of money spent thus far, he felt that only the surface of the problem had been scratched and stressed that every dentist would suffer if the practice continues to grow. He suggested that the dentist should discuss prosthetics as a health problem.

Dr. Abraham expressed the College's pleasure in having the facilities of the Montreal Dental Club for the C.D.A. meeting and hoped that all members would turn out for the College's Presidential Ball to be held during the convention.

Honorary membership to the Club was conferred upon Dr. D. P. Mowry in recognition of 35 years of practice. The list of accomplishments mentioned would have sounded far-fetched for anyone else but the energetic Dean of the

The 55th Annual Meeting of the Montreal Dental Club was held on January

Faculty of Dentistry of McGill University.

Dr. J. A. MacDonald's announcement concerning the Club's Winter Outing at the Alpine Inn on the week-end of February 13 was much better received than his explanation of how he acquired the very prominent "shiner" around his right eye.

Dr. Donigan announced that this year the Secretary of the Joint Committee in charge of the Fall Clinic, Dr. Bruce Ward, would also act as his assistant and will take over the Chairmanship of the 1954 Fall Clinic.

The officers of the Club for the coming year are:

President—M. L. Donigan; Honorary President—N. L. Martin; Pres.-elect—F. A. Edward; Secretary—J. M. Charnard; Treasurer—F. O. Frederick; Archivist—C. C. Bourne.

Drs. A. E. Pye, L. P. Ramsay, J. McCutcheon, were appointed directors for a two-year period together with Drs. H. L. Greaves, J. A. MacDonald and D. B. Ward who are serving their second year. G. D. Armstrong

A meeting of the **Mount Royal Dental Society** was held on Jan. 16. The clinician of the day was Dr. Louis Blatterfein, Diplomate of the American Board of Prosthodontics and Assistant Professor in Prosthetic Dentistry at New York University. Dr. Blatterfein spoke on "Partial Denture Restoration".

Dr. Blatterfein showed, in a very interesting manner, how to develop a pattern in partial denture construction. He emphasized throughout his presentation that we must not do anything to harm the hard or soft tissues of the mouth, but must preserve the remaining teeth and ridges.

The partial denture was then divided into its three main components, clasps, rests and base, and each of these was discussed in some detail.

The clasp must provide primary retention, effective lateral force transmission, and balance for the denture. Dr. Blatterfein then showed how this is brought about by a proper survey of the case, proper attention to the rigidity or flexibility of the various portions of the clasp and their location, the principle of reciprocation of the clasp arms and the proper number and location of clasps.

Dr. Blatterfein then outlined the following functions of the rest component, (1) to transmit occlusal forces to the teeth (2) to keep the clasps in their predetermined positions (3) to keep the saddle extremities in their predetermined positions (4) to prevent food impaction (5) to provide indirect retention in

free-end saddle cases. He stressed proper preparation of the tooth to accommodate the rest and to have its seat at right angles to the long axis of the tooth.

In dealing with base design we must bear in mind that the stresses must be spread over as large an area as possible. Accordingly the connecting bars must be rigid enough to transmit the stresses from one saddle to the others. Dr. Blatterfein then outlined a simple method of obtaining the proper base design easily and efficiently. Mark the base saddles on the cast. Outline the areas to be kept away from *e.g.*, torus palatinus and marginal gingivae. Draw in the connectors between the various saddles. If the connectors are kept rigid and proper attention is paid to the comfort which we know the patient expects, a very satisfactory result will be obtained. The case of course must always be analyzed individually and not by classification.

The speaker was thanked by Dr. S. Hershon, and the meeting was then adjourned.

Histological Background in Secondary Discolouration of Non-Vital Teeth was the subject presented to the members of the **Montreal Endodontia Society** at the Club's January meeting by Dr. Robert F. Harvey. The meeting, which was held in the McGill Dental Faculty lecture room on January 29, opened with a film which beautifully demonstrated the application of the rubber dam.

Introduced by Dr. H. Lindsay Muscels, Dr. Harvey described briefly the formation of dentine and enamel referring chiefly to the formation of enamel lamellae and the dentinal tubules together with the Tome's Processes. Based chiefly on the work of Fish, found in his book "Surgical Pathology of the Mouth," he described the various reactions of the dentine and odontoblasts in response to stimuli with the formation of secondary dentine, transparent or sclerosed dentine, dead tracts and the formation of eburnoid.

Following a brief review of all these reactions, the speaker pointed out that following the completion of endodontic therapy, the whole mass of dentine was filled with dead tracts—these dead tracts being empty dentinal tubules, the Tome's processes having degenerated and the tissue fluid being absent. The whole tooth being dried out becomes very brittle and cracks form easily. These cracks together with enamel lamellae and an absence of cervical cementum allow stains to penetrate to the dentine, and once this is reached, rapidly penetrate to the pulpal surface. Dr. Harvey believed, therefore, that following supposedly successful bleaching of

non-vital teeth, they could easily again darken from oral stains.

Dr. J. P. Lantier presided at the meeting; the speaker was thanked by Dean D. P. Mowry.

BRITISH COLUMBIA

For the February meeting of the **Vancouver and District Dental Society**, the Chairman of the Program Committee chose as guest speaker Doctor William Boyd, head of the Department of Pathology of the University of British Columbia.

Dr. Boyd was graduated in Scotland, and came to the University of Manitoba to establish the chair of Pathology in 1926. Later, he held the position of Professor of Pathology at the University of Toronto. He took over his present position two years ago.

At the afternoon session, his subject was "The Spread of Tumours," and for the evening, he spoke on the "Concept of Cancer."

Following the afternoon meeting, a film on Jacket Crown Preparation and Construction was shown.

The Executive Committee of the **British Columbia Dental Association** finds its time well occupied with investigations into many matters of interest to the profession.

The Public Relations Committee, under the chairmanship of Dr. Munsie, has given much study to the subject of Public Relations, and a five-point policy has been prepared for consideration by the Executive Committee, as follows:

1. Presentation to the newspapers of B.C. of a plan to give the public an opportunity to acquaint themselves first-hand with the services the dental profession is rendering in this province, and to learn what is required in the way of training and registration of qualified dental practitioners.
2. A long-term program of newspaper advertisements designed to inform the public of the service the dental profession is rendering in B.C.
3. Better coverage in B.C. newspapers of newsworthy subjects concerning the dental profession in this province.
4. Retaining of a public relations institute to advise upon how best to handle specific problems which arise from time to time, which affect our public relations.
5. More frequent news of public relations activities to the membership of the B.C. Dental Association at large.

Immediate action, upon the institution

of this program, resulted in the visit of six representatives of major daily newspapers of the province to the University of Washington Dental School, recently. The faculty and staff of the University were most helpful and co-operative in this venture. The Dean, Dr. E. M. Jones, spent the entire morning with these members of the press, explaining the curriculum, the correlation between basic science studies and technical procedures, and the necessity for adequate basic science education.

In the afternoon, the members of the press were escorted through the school, where they were able to see the various technical procedures being carried out. They were particularly interested in the prosthetic department, and spoke freely to students, patients and instructors.

The ultimate value of this venture may never be fully known, but the wisdom of the undertaking will be obvious to all.

Much progress has been made in the investigation and preparation of a bank loan plan, to be called the B.C.D.A. Post-Payment Plan. On sums of over one hundred dollars, the patient may apply for credit under this plan, and fill out the application form in the dental office. The form is then sent to the bank. Upon approval by the bank, work may be carried out, and the contract completed, with no concern over payment, as the dentist's fees are assured. The patient is responsible for regular payments to the bank, plus six per cent interest and a small insurance fee, the latter to apply in case of death of the person responsible before payment is completed.

The dentist receives only 95% of the total sum. The remaining 5% is to be deposited in a reserve account, in the name of the B.C.D.A. Notes that cannot be collected will be charged against this reserve account.

Control of the plan will be in the hands of a committee appointed by the Executive Committee of the B.C.D.A.

Many B.C. dentists journeyed to Seattle for the **Annual Mid-Winter Clinic**, held on February 14. The featured lecturer was Dr. William Wainwright, of the University of Illinois, who presented facts about radio-active isotopes and their application to dentistry.

The committee on **Fluoridation of Communal Water Supply**, working under the auspices of the Vancouver and District Dental Society, has reported on the equipment available for adding the chemical to the water supply of individual homes. It is believed that the plan is not practical, as the cost is far

greater than it would be if supplied on a community basis, and the equipment would be discarded if the general plan should be adopted.

The committee does not favour a high-pressure campaign in favour of communal fluoridation at present. The experience of the near-by city of Seattle suggested that the public is not yet ready to adopt the system. It is felt that if a plebiscite were taken at the present time, the result might be defeat, as in Seattle.

The College of Dental Surgeons of B.C. suffered a great loss with the **Resignation of the Registrar, Dr. Bob Pallen**, recently. Dr. Pallen had held the position since the death of his predecessor, Dr. W. J. Lea, and had come to be regarded as an essential and almost permanent part of the College. He has served in many capacities in the Canadian Association, in the B.C.D.A., and in the Vancouver and District Society, and is well known throughout Canada for his great contribution to dentistry. The increasing pressure of work has been too great a strain, and he has felt obliged to hand over the work to others. It is hoped that he will take advantage of the opportunity to relax, as he may well do with the knowledge of many jobs of work well and truly performed.

Dr. Harold Cline has assumed the position of Registrar-Treasurer of the College, and a full-time non-professional secretary-manager will be employed.

At the **Victoria Dental Society** meeting for January, Dr. Ross McNeely, pathologist at the Victoria Jubilee Hospital, gave an excellent clinic on "Malignant Tumours of the Oral Cavity," illustrated by slides.

Information was received at this meeting regarding the formation of a new society on Vancouver Island, consisting of dentists of the upper Island. We shall hope to hear of the first meeting of this society in the near future.

The **Fraser Valley Dental Society** took advantage of the presence of many capable clinicians from Vancouver and New Westminster for meetings in the latter part of the past year. Among these were Dr. Blair Wolfe, on "Modern Approach and Techniques in Endodontia"; Dr. Hamilton Simmons, on "Some Aspects of Oral Surgery"; Dr. Lloyd Chapman, on "Orthodontia for

the General Practitioner", and Dr. Terence Parsons, presenting a chair and table clinic on the use of plastic filling materials.

For the February meeting, the Society continued this plan, for the clinician was Dr. Robert O'Neil, lecturing and demonstrating on "Caries Control Procedures in General Practice".

ALBERTA

On January 28, 1953, an **Organizational Meeting of the Dentists of the Peace River Country** was held in Rycroft, under the direction of Dr. Gordon McMurray of Beaverlodge, who is presently a member of the Board of Directors of the Alberta Dental Association.

In spite of inclement weather, this meeting was well attended, nine of the twelve dentists of the Peace River district being present. These practitioners are widely scattered and it meant a long journey for most.

Those present were: Dr. G. McMurray—Beaverlodge; Dr. C. Compton—Grande Prairie; Dr. D. G. MacGregor—Grande Prairie; Dr. V. Erickson—Sexsmith; Dr. P. Poohkay—Rycroft; Dr. M. Woronuk—Fairview; Dr. D. Deedrick—Peace River; Dr. N. K. Nishio—High Prairie; Dr. L. P. Lyman—High Prairie.

The advisability of forming a society was discussed, and all present were in favour of such a move. The chief drawback to the formation of such a society was the distances separating the towns. However, the need for the stimulating effect of organization in this country was expressed by all.

Election of officers for the coming year took place. President—Dr. D. G. MacGregor, Grande Prairie; Vice-Pres.—Dr. M. M. Woronuk, Fairview; Sec.-Treas.—Dr. C. M. Compton, Grande Prairie.

Several matters of common interest were discussed and it was decided to hold meetings every three months. It was planned to register the society under the name of Peace River District Dental Society. The next meeting date was set for May 23 in Grande Prairie at which time it was hoped a clinician from some outside point could be present.

At the close of the meeting a banquet was served at the Rycroft Hotel. This had been nicely arranged by Dr. and Mrs. Poohkay. C. Compton

The limit to social security measures is determined by the number of men and women who are working, and the amount of wealth they can produce.—Hon Paul Martin.

BRITISH COMMONWEALTH NEWS**GREAT BRITAIN****B.D.A. Plan Rejected by Ministries:—**

The British Dental Association, after a canvass of its members, found that nearly 2,500 dentists were ready immediately to treat 20,000 children a week in their own surgeries. The plan submitted to the Ministers of Health and Education, and the Secretary of State for Scotland, has been rejected.

The Ministers welcome the interest shown by the Association in the problem of providing dental treatment for the priority classes, and appreciate that the scheme suggested is only a short-term policy. They state that there are certain principles which they consider to be fundamental to the proper organization of a dental service for the priority classes.

The first is that as has been shown by experience the most effective way of providing treatment for school children is in clinics closely associated with school routine. Secondly, it is imperative, particularly in present economic circumstances, to achieve the utmost economy in expenditure and here again experience has shown that children can be treated in clinics at a substantially lower cost than when treated by private dentists. Thirdly, one of the fundamental difficulties facing all branches of the dental services at the present time is the shortage of dentists. In the treatment of children dental manpower can be used more economically in clinics than in private practice.

The Ministers would also like to see the private practitioners of each district together agree to accept collective responsibility for the dental care of the district's children, insofar as may be necessary to supplement the services already provided by the local authorities and for this purpose offering part-time service in the already organized clinics.

The British Dental Association's rejoinder is to describe this reply as a "counsel of despair." Clearly, they say, the Ministers would rather save cash than children's teeth and ignore the fact that in present conditions there is no hope of getting enough dentists in clinics to do all the necessary work. Dentists have offered to do the work in their own surgeries and this is the only way that immediate service can be secured. Any alternative scheme would take years to establish and in the mean-

time the teeth of yet another generation will be ruined.—D. Mag. and Oral Topics.

Association News Sheet:—In the News Sheet published in the January 20 edition of the British Dental Journal the following items concerning dentistry in Great Britain are of special interest.

Many dentists are worse off than they have been for a very long time and some are faced with ruinous decreases in income due to cuts in the actual scale of fees, decrease in demand and increase in expenditure. The cuts were just over 20 per cent in June 1949, and a further 10 per cent cut in May 1950. The decrease in demand resulted from the imposition of charges for dentures in May 1951 and of the general charge of the first £1 of the cost of treatment in June 1952.

In one large area in the north of England the average payment to dentists during the last quarter of 1950 was £953; in 1951 this had reduced to £658, and moreover, in 1951 more than a quarter of the dentists were paid less than £100 a month.

Influenza Vaccine Trial:—The Medical Research Council and the Ministry of Health are organizing trials this winter of a vaccine against influenza A. Two vaccines are to be used: (a) a vaccine selected as a result of investigations last winter, which is suitable to the strain most likely to cause influenza this winter; (b) a vaccine of the type which has been available for some years. The trials are to be carried out on 15,000 volunteers drawn from industry, the Services, hospital nursing staffs and the universities. In addition, a special trial is to be carried out on the Isle of Lewis in the Hebrides. Half of the volunteers will be inoculated with one vaccine and half with the other. They will then be supervised for three months.—Can. M.A.J.

AUSTRALIA

Australian Dental Society Endorses Fluoridation:—The Australian Dental Association recently endorsed the finding of its National Health and Medical Research Council that the addition of fluorides to water supplies is a "reasonable and safe measure" to be carried out under strict supervision and scientific control.

You can never bury your influence.

GENERAL NEWS

Malayan Chinese Dentists Give Free Care to Refugees:—In the Federation of Malaya 500,000 families, who have fled from Communist terrorists and have been resettled in newly-established villages, will receive dental care through a program originated by two members of the Central Malayan Chinese Dental Association, Ng Yuen Watt and Ng Lian Tuan.

The government of Malaya is building dental clinics in the new resettlement villages; members of the Central Malayan Chinese Dental Association are providing free dental care in these clinics; equipment is being provided by the United Nations International Children's Emergency Fund.—*Jour. of A.D.A.*

Smoking and Lung Cancer:—It is reported in the British Medical Journal that a position has now been reached with lung carcinoma, in that tobacco has been incriminated as the vehicle conveying an agent responsible for a large proportion of the cases and that until further research proves otherwise the younger generation will have to decide, each for himself or herself, whether the additional risk of contracting lung carcinoma is worth taking.

For a middle-aged man lung cancer diminishes his expectation of living 20 years by about one-twentieth.

Use of "In Memory Of" Cards in Lieu of Flowers:—A significant living memorial is established each time an "In Memory Of" card is used in lieu of flowers. The sum given to the Dental Foundation in memory of a deceased colleague or friend is in reality a living memorial—it permits additional dental research—a greater library—scholarships—student loans. The flowers will be gone in a day or two, but a gift to the Dental Foundation extends the opportunity for greater living, the birth of a new idea, and the building of a greater profession.

How does it work? A number of "In Memory Of" cards were sent to every dentist in North Carolina. When a colleague or friend passes away an "In Memory Of" card is sent to the family. The dentist then mails a cheque which he ordinarily spends for flowers, to the Secretary of the Dental Foundation in Chapel Hill. The dentist also sends some information regarding the deceased and the family. Following this, the Secretary of the Foundation writes a letter to the family and sends a copy to the dentist. The letter reads something like this (varies with individual case).

"The Dental Foundation of North Carolina, Inc., has received a contribution from your friend, Dr., of, in lieu of flowers and in memory of the late"

—*Jour. of N. Carolina D. Soc.*, June 1953.

"Dr. Bauer, President of the American Medical Association, has listed these points as 1953 objectives: (1) Work with rural communities to establish facilities for physicians, so that we shall have a better distribution of physicians. (2) See that good medical care for the indigent is available everywhere, just as it is in some states. (3) Extend public health coverage to areas lacking it. (4) Develop plans for the care of the chronic invalid. (5) Expand our voluntary insurance program, not only to cover more persons, but to cover those over age 65 and those suffering from illness of long duration. (6) Clean our own house, by disciplining those physicians who tarnish the reputation of the whole profession by their unethical acts of over-charging, accepting kick-backs and making commercial arrangements with pharmacists. (7) See that the public is protected so that they can always obtain the services of physicians. (8) Revitalize our county societies and make them leaders in their communities in all health matters. (9) Inculcate the newly trained physician in the tradition and ethics of medicine."—*N.Y. Times.*

Reduction in Caries:—Dr. J. Roy Blaney who is in charge of the fluoridation program in Evanston, Illinois, recently stated that after only five years of fluoridation, the permanent teeth of the six-to-eight-year-old children in that city show a 46 per cent caries decrease.—*N.W. Dentistry.*

Pittsburgh Inaugurates Fluoridation Program:—More than 700,000 persons in Pittsburgh and adjacent communities are now receiving fluoridated drinking water.

A.A.A.S. Dental Section Recommends Fluoridation:—Water fluoridation was strongly endorsed by the dental section of the American Association for the Advancement of Science during the recent national meeting of the A.A.A.S.

Conference on Prepayment Plans for Dental Services:—In continuing its study of prepayment plans for dental

services, the Council on Dental Health met with representatives of Blue Shield Medical Care Plans at the Central Office of the American Dental Association in Chicago. The conference was held October 27 in conjunction with a regular meeting of the Council.

The chief accomplishment of the session was a clarification of the method of approach for the establishment of prepayment dental care plans.

There are two types of prepayment plans: one based on insurance principles, such as Blue Cross, the other on per capita fees and contract dentistry, such as the Health Insurance Plan of Greater New York, Inc. (H.I.P.) in New York. The latter type is not generally acceptable because it does not meet the standards established by the medical profession for sound prepayment plans.

Dentists obtained amendment to the existing enabling act in Pennsylvania which was one of the first states to give some dental coverage in a Blue Shield plan.

In Pennsylvania, the dental service coverage in the Blue Shield plan is limited to oral surgery. Dentists, however, object to the "in-hospital-only" restriction, saying it forces them into the position of hospitalizing patients who could be operated on in the office. Alveolectomies performed in hospitals under the Pennsylvania plan increased significantly when this service was covered by Blue Shield: one 40-bed hospital had 19 admissions for alveolectomies in one month, 22 in another month.

The public undoubtedly wants inclusion of dental services in Blue Shield, but it is questionable whether it will pay the increased rates that would be necessary to obtain them.

The wisest course for dentistry to pursue in entering the prepayment field would be through the establishment of several of the pilot type of programs. One good way would be to develop an experimental dental prepayment plan limited to children, especially in an area where most children can be provided services on a maintenance basis. The existence of a large backlog of unmet dental care needs has been one of the chief stumbling blocks in the development of a prepayment plan.

Blue Shield probably would have a more favourable attitude toward inclusion of dental benefits if the dental profession established its own prepayment organizations and had Blue Shield manage the administrative operation.

—Journal of A.D.A. Jan. 1953.

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Nutrition of the Aged:—With advancing age metabolism tends to change

from an anabolic to a catabolic stage, creating a demand for better nutrition in all aspects except calories. The quality of the diet as a whole should be considered.

The need for calcium is increased, possibly due to disturbed absorption. The role of fat has not been fully settled. Overweight is associated with many of the diseases of old age. When physical activity is reduced consumption of fats and carbohydrates should be limited. However, carbohydrate foods are cheaper than protein and have a sparing action on proteins.

Vitamin A is definitely correlated with the life span. The B vitamins are particularly important where carbohydrate consumption is high. Vitamin C is important in maintaining suprarenal function. There is a continual exchange of tissue proteins. With the increase of catabolic action the need for protein is increased. Several cheaper forms of high quality protein may now be added to flour with beneficial results—dry skim milk, soybean meal, peanut meal, food yeast.

Nutritional extension of the adult life cycle means a longer period of prime. With proper guidance present food supplies can be used to better advantage. Educational campaigns are needed both in encouraging production of nutritive foods and in guiding families' food habits. A healthier, happier old age is better assured if good eating habits are established in youth.—South African Medical Journal, September 1952.
—per Dept. Health & Welfare, Ottawa.

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In Japan, about five cents of every Occupation welfare dollar was spent on **Public Health.** This was enough to drop the death rate of a country of 80 million from 29 in 1945 to 11.4 in 1949. It was enough to furnish the Japanese people with an appalling problem of how to feed an estimated 100 million by 1962, and 166 million by 1985.—Robert C. Cook, Managing Editor, *Jour. of Heredity.*

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The erroneous belief that **A Child's First Teeth** are unimportant "because they fall out anyway" has added immeasurably to the staggering toll of adult dental disease in the United States, the president of the American Dental Association said today.

In a statement issued on the eve of the fifth annual National Children's Dental Health Day to be observed throughout the nation next Monday (Feb. 2), Dr. Otto W. Brandhorst, of St. Louis, said the care that teeth re-

ceive during childhood determines to a substantial degree the state of the individual's dental health throughout his adult life.

"More than 90 per cent of boys and girls have an advanced case of tooth decay by the age of 16 with an average of seven affected teeth each and more teeth are lost as the result of dental decay than from any other cause," Dr. Brandhorst said.

"Loss of teeth prematurely in children can lead to poor mastication, diseased second teeth and facial disfiguration as remaining teeth shift and crowd out of position the erupting second teeth", he said.

"The future dental health of our children lies in the hands of today's adults," Dr. Brandhorst said. "Prevention is the key to dental health."

Dr. Brandhorst listed four rules of dental health for children:

1. Proper use of the toothbrush immediately after eating is one of the most effective weapons against dental decay. By the age of three, the child should be taught to brush his teeth, or at least rinse out his mouth with water, within 10 minutes after eating.

2. The diet should be well-balanced with sugar intake kept as low as possible. America's sweet tooth is the No. One enemy of dental health and the prime cause of tooth decay.

3. Early detection and treatment of dental disease will prevent more serious dental ills later.

4. The fluoridation of community water supplies to give children in the community the prospect of two-thirds less tooth decay throughout their lives than children living in areas where water supplies are fluoride-deficient.

Dr. Brandhorst described fluoridation of public water supplies as "the most effective large-scale means ever devised for the prevention of dental decay." He reported that nearly 600 communities throughout the United States have placed the program in operation.

He called for the development and expansion of community health programs to make dental health education and care available to all children as the most practical way of raising the level of the nation's dental health.

The prevalence of "distorted claims" in **Toothpaste Advertising** has been sharply criticized in *The Journal of the American Dental Association*.

In a report issued by the Association's Council on Dental Therapeutics, a "skeptical attitude" was urged toward all dentifrice advertising which makes

claims of special protective or curative qualities made for any dentifrice now on the market on the grounds that no adequate evidence exists to substantiate such claims.

The report pointed out that proper use of the toothbrush is more important in oral hygiene than any particular kind of dentifrice and added that advertising claims for many toothpastes and powders are "exaggerated and misleading."

"The firms marketing some dentifrices apparently resort to these forms of 'puffery' in their efforts to compete successfully in a field crowded with articles whose questionable values are misrepresented daily in advertising," the council said, adding:

"The council deplores the current distorted claims in dentifrice advertising, and urges that a skeptical attitude be maintained toward all dentifrice advertising which implies that such products have a demonstrated usefulness beyond their ability to assist the toothbrush in cleansing the accessible surfaces of the teeth."



By Edward Samson, F.D.S.R.C.S. (Eng.) F.C.S.
Courtesy Dental Magazine and Oral Topics

IN MEMORIAM

Charles Hollis Pierce Moore of Montreal, Quebec, died suddenly on February 3. Dr. Moore was born in Windsor Mills, Que., in 1889, and was graduated from the Dental Faculty of McGill University in 1918 with the Stevenson Gold Medal. Following graduation he joined the staff of the Montreal General Hospital as intern and the Faculty of Dentistry, McGill University, as demonstrator in Clinical Dentistry, which post he held until retirement in 1950 when he was tendered a dinner by the Faculty.

He was a member of the Board of the Montreal Dental Club in 1933 and 1934 and was Secretary in 1935.

Dr. Moore was active in hockey as a student and later a keen enthusiast in curling and fishing.

He is survived by his widow, one son and a daughter.

C. Nelson Schnarr of Kenora, Ontario, died on October 31 last at the age of 84. He was graduated from the College of Dentistry of the Royal College of Dental Surgeons of Ontario in 1895 and has always practised in Kenora except during his period of war service from July 1917 to February 1919.

Dr. Schnarr retired from practice in 1921 and became an honorary member of the Royal College of Dental Surgeons in 1945.

He was an ardent sportsman and enthusiastic in fraternal circles. Among offices he held, the following may be mentioned—President Kenora Rotary Club 1923; President Rat Portage Hockey Club 1905; President Kenora Curling Club 1899; President Kenora

Rowing Club; Master of his Masonic Lodge 1902-03; District Deputy G.M. in 1914; P.Z. and G.R. Golden Chapter No. 70; Shrine (A.A. & N.M.S.) I.O.O.F.; President Kenora Board of Trade 1911-20; Alderman in Kenora 1912-13. Served with rank of major in first Great War in Canada, England and France from 1915-1919.

His church affiliation was Anglican.

Clarence Edward Higley of Chatham, Ontario, died on January 11 of this year. He was graduated from the College of Dentistry of the Royal College of Dental Surgeons of Ontario in 1914. He began his practice of dentistry at Blenheim, Ontario, but moved to Chatham in 1917.

He was a past president and secretary of Kent County Dental Association.

Dr. Higley's interests are indicated by his memberships and offices held. He was a member of Masonic Blue Lodge, Chapter, Preceptory Shrine and Scottish Rite; a member of Loyal Order of Moose; a member of Chatham Civitan Club; member of Chatham Barbershop Octette and an active Baseball Executive.

He was a member of Board of Management of Holy Trinity Church, Chatham. Dr. Higley is survived by his widow, one son and one daughter.

Thaddeus P. Hyatt of New York, internationally known exponent of preventive dentistry and originator of prophylactic odontotomy, died recently at the age of 88.

DIRECTORY

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Quelques faits cliniques et pathogéniques au sujet de la pyorrhée*

par Dr RENE VINCENT, Professeur à l'Institut de Stomatologie de la Faculté de
Médecine de Paris

L'étude de la pyorrhée, à laquelle j'ai consacré le meilleur de ma carrière, m'a amené à des conclusions sur la pathogénie et le traitement de cette maladie que je regrette de devoir dire en opposition avec les conceptions officielles admises aussi bien en Europe qu'aux Etats-Unis. J'en ai rassemblé l'essentiel dans un ouvrage publié en 1946 sous le titre "*La Pyorrhée dans le cadre de la médecine Générale*" (Masson et Cie) Il s'agit d'un travail trop complexe et trop vaste pour qu'il soit possible de l'exposer en entier au cours d'une conférence. Je me contenterai d'attirer votre attention sur les principales acquisitions nouvelles que je crois avoir apportées pour éclairer le mystère nausographique qu'est encore la pyorrhée, cette deuxième maladie dentaire, après la carie.

Il va sans dire que je me tiendrai bien volontiers à la disposition de ceux dont j'aurais eu la chance d'éveiller la curiosité pour leur donner de plus amples explications et surtout pour leur montrer sur des malades la réalité des faits cliniques que je vais évoquer.

Chronologiquement, c'est à Fauchard, dentiste de Louis XIV, que revient le

mérite d'avoir fait, en 1746, la première description clinique de la maladie à laquelle il donna le nom sous lequel elle est encore désignée. Il s'agissait pour Fauchard d'une maladie locale qui "sans intéresser les autres parties du corps attaquerait seulement les gencives et les dents." Il est remarquable de constater que depuis le 18ième siècle cette opinion n'a pour ainsi dire pas varié.

La pyorrhée identifiée à une pyarthrite alvéolodentaire, caractérisée par une suppuration tenace aboutissant à l'ébranlement, puis à la chute des dents, est toujours une maladie locale dentaire, propre au périodonte.

On lui reconnaît des causes locales et même générales, mais incapables, isolées et même réunies, de reproduire la maladie et dites, de ce fait, prédisposantes. La cause efficiente, déterminante, unanimement admise est l'infection. Malheureusement, il ne s'agit pas d'une infection spécifique, puisqu'aucun germe n'a pu être isolé qui reproduise expérimentalement la maladie. Cette infection viendrait du milieu buccal et serait provoquée par les microbes, hôtes habituels de la bouche.

*Communication présentée devant les membres de la Société Dentaire de Montréal, en novembre 1952.

Note de la rédaction: La livraison de décembre 1952 contenait un article du docteur Vincent, qui exposait une méthode de traiter la pyorrhée, basée sur les données du présent article. La logique aurait voulu que la communication rapportée ci-haut précède l'autre et nous prions les lecteurs de considérer l'article du mois de décembre comme la suite de celui-ci.

Sous l'influence des causes prédisposantes, les germes banaux, hôtes de la cavité buccale, deviendraient agressifs; ils attaqueraient la muqueuse gingivale et ils la pénétreraient pour y entretenir une infection dont nous connaissons bien la persistance tenace.

Cette conception résiste mal à l'analyse des faits.

Tout d'abord, les causes prédisposantes sont si banales, si fréquentes qu'on s'explique mal, si tel était leur pouvoir, qu'il soit possible d'échapper à la pyorrhée au cours d'une existence.

Enfin, dans toute infection, deux éléments sont à considérer; le microbe et le terrain.

Les microbes sont ici dans la salive à l'état dit saprophytique, c'est-à-dire, en léthargie, inoffensifs. Notons encore accessoirement qu'ils séjournent relativement peu dans la cavité buccale. Ils sont sans cesse entraînés avec la salive dans la déglutition vers cette puissante barrière de défense qu'est l'acide chlorhydrique de l'estomac.

L'oxygénation encore liée à la respiration s'oppose pour sa part à la pullulation des anaérobies.

Quant au terrain il est représenté par la muqueuse de la cavité buccale particulièrement résistante au niveau de la gencive, à ce point qu'on la dénomme fibromuqueuse.

Son épithélium est exceptionnellement armé pour la défendre et il est en perpétuelle desquamation.

Est-il besoin de rappeler ce fait bactériologique qu'un épithélium intact est un obstacle insurmontable aux microbes?

Dans la fibromuqueuse sont épars des amas lymphoïdes décrits par Retterer, dont nous savons le rôle protecteur.

Enfin la muqueuse buccale est en relation avec ce puissant anneau lymphatique de Waldeyer que nous voyons s'opposer si étonnamment à l'infection dans les traumatismes ou les fracas des mâchoires.

On ne voit guère dans l'organisme que la muqueuse du col urétrin dont les moyens de défense puissent lui être rapprochés.

Aussi s'explique-t-on assez mal que

des microbes banaux, à état saprophytique, puissent tout à coup récupérer une virulence et une agressivité telles qu'ils franchissent la barrière épithéliale, pénétrant dans la fibromuqueuse et s'y développent impunément pendant les années que prend habituellement la destruction des éléments de soutien de la dent.

Si l'examen objectif des faits rend peu plausible ce mode de contamination de la gencive tel qu'il nous est proposé, il ne permet pas en tous cas de douter de la réalité de l'infection dont elle est le siège. Nous y trouvons en effet tous ces signes cliniques habituels: rougeur, tumeur, chaleur et suppuration.

Toutefois, dans les formes cliniques qu'il est classique de décrire à la pyorrhée, il en est une dite pyorrhée sèche où jusqu'à la période terminale les signes d'infection ne sont pas cliniquement décelables.

Frappé par ces invraisemblances et ces contradictions, il m'est apparu que l'examen des faits cliniques devait être le seul guide fidèle dans la recherche de la vérité.

J'ai pensé que le diagnostic de chaque cas clinique local devait être complété par l'examen systématique et approfondi de l'état général du malade.

Je crois pouvoir affirmer avoir examiné de cette double façon quelques 5,000 patients venus à mes consultations hospitalières ou privées. Voici trop brièvement, trop schématiquement ce qu'il m'a été donné d'observer.

En fait, ce qu'on est convenu d'appeler pyorrhée se présente en clinique stomatologique sous deux aspects bien différents.

Où la gencive est rouge, congestionnée, saignant au moindre contact et même spontanément.

Il y a des clapiers, de la suppuration et du tartre plus ou moins abondant coloré en brun rouge ou brun vert.

Où la gencive est pâle, ischémique à ce point qu'une pique n'en fait soudre très lentement qu'une gouttelette de sang, vite tarie. Il n'y a ni clapier, ni trace de tartre.

Pour la commodité de l'exposé, je désignerai la 1ère forme sous le nom de

pyorrhée de forme inflammatoire et la 2ème de forme ischémique.

Que donne habituellement l'examen de l'état général des malades porteurs de l'une ou l'autre de ces formes schématiques?

a) *Forme inflammatoire*

On est frappé de constater ici un état infectieux subaigu ou chronique à localisations diverses mais toujours antécédant chronologiquement à l'apparition des premières manifestations de la pyorrhée, notamment de la gingivite.

Le plus souvent, il s'agit de gastro-entéropathies plus ou moins anciennes, ce qui n'est pas surprenant, si l'on songe que la bouche n'est après tout que le 1er étage différencié du tube digestif dont les interdépendances pathologiques sont bien connues aux étages sous-jacents.

Il s'agit d'entéropathies, d'entérocolites, de colites avec constipation ou diarrhée, d'appendicites, de rectites, de colibacilloses, d'ulcérations gastro-intestinales, de cholécystites, de maladies ou de troubles hépatiques, etc.

A coté de ces états infectieux des organes digestifs et paradigestifs de beaucoup les plus fréquents, prennent place encore les infections utéro-annexielles, les infections cutanées récidivantes, les infections sinuales, amygdaliennes, otitiques, les rhumatismes chroniques, les infections sanguines.

Tous ces malades présentent à des degrés plus ou moins marqués les signes habituels des toxi-infections chroniques; pâleur, anémie, poussées fébriles, asthénie souvent très prononcée, vertiges, insomnies, migraines, etc.

b) *Forme ischémique*

Dans l'autre forme, ischémique, l'examen de l'état général révèle un trouble du métabolisme du Ca et du P. par insuffisance d'apport ou d'assimilation (régimes carencés, troubles hépato-intestinaux) ou excès de soustraction au niveau de la réserve calcique du squelette (soit une maladie endocrinienne précise, soit un dysendocrinisme plus ou moins complexe, mais décelable).

Sous le nom de pyorrhée, nous englobons donc des états pathologiques aussi dissimilaires dans leur aspect local que dans les manifestations pathologiques générales qui les accompagnent. Toutefois, dans chaque forme bien définie, un apparemment évident existe entre la nature de la lésion locale et celle des symptômes généraux.

Un seul symptôme leur apparaît commun, c'est au niveau du périodonte: la destruction, la lyse, ou mieux, la raréfaction du tissu osseux alvéolaire. Encore l'image radiographique des septa osseux est-elle aussi très différente.

Dans la forme inflammatoire, le triangle, le fer de lance, représenté par le septum osseux est tronqué; au lieu de la pointe normale, on observe une façon de cratère en continuité avec une étroite bande sombre orientée perpendiculairement vers la base du triangle osseux.

Dans la forme ischémique, le fer de lance conserve sa pointe et sa forme, mais il est amenuisé, abaissé et la densité osseuse est visiblement diminuée dans son ensemble.

Ce que nous appelons pyorrhée ne serait donc qu'une maladie de l'os alvéolaire. Elle devrait, de ce fait, s'inscrire dans le cadre des maladies du tissu osseux et par conséquent obéir aux lois bien connues aujourd'hui de la physiologie et de la pathologie du tissu osseux de l'organisme. Je ne rappellerai ici que les principales, telles que les ont révélées les travaux des Prof. Leriche et Policard.

Physiologiquement, à coté de son rôle mécanique, le tissu osseux a encore "celui de réserve de phosphate de Ca, grâce à laquelle nous maintenons dans nos humeurs et dans le sang le constant équilibre minéral nécessaire à l'harmonie de la vie". Il est en perpétuel remaniement; sans cesse, il se fait et se défait. Il est essentiellement labile et sa vie organisée en vue d'un dépôt est faite de la libération et de la réparation alternée de sa réserve minérale.

Il est acquis expérimentalement que la libération des composés calciques réclamés par l'organisme est due à l'action

au niveau du squelette, où elle lui parvient par la lymphe, de l'hormone sécrétée par les quatre glandes parathyroïdes, la parathormone. Quant à la pathologie osseuse, elle se résume en sa raréfaction. Dès que la soustraction calcique devient supérieure de façon durable et persistante à sa réparation, la pathologie commence.

Des lois qui gouvernent la physiologie du tissu osseux et dominant sa pathologie, je n'en rappellerai que trois en raison de leur intérêt particulier.

a/ Physiologiquement c'est l'hormone parathyroïdienne qui use continuellement l'os. Si l'usure dépasse la reconstruction, la raréfaction devient pathologique.

b/ L'hyperhémie a le même effet que la parathormone, mais régionalement. Dès qu'il y a suractivité circulatoire, l'os se raréfie.

Si l'hypermie dure, la raréfaction devient pathologique.

c/ Loi dite de Kölliker.

Dans les maladies du squelette, la résorption osseuse intéresse avec prédilection les os de formation récente et ceux des régions qui sont le siège de fonctions physiologiques continues, comme la mâchoire, d'insertions tendineuses et de fortes pressions.

Le rapprochement des faits cliniques révélés par l'examen local et général des malades atteints de pyorrhée avec les lois de la pathologie osseuse éclaire le processus pathogénique des deux formes schématiques sous l'aspect desquelles se présente à nous la pyorrhée.

A/ La forme ischémique s'inscrit visiblement dans la loi No I. La raréfaction de l'os alvéolaire apparaît bien comme la conséquence d'un trouble du métabolisme du Ca, soit par insuffisance d'apport ou d'assimilation, soit par suite du dysfonctionnement d'une glande endocrine dont l'interdépendance avec le système endocrinien aboutit à un désordre de la sécrétion parathyroïdienne.

Effectivement, l'étude de l'état général des malades atteints de pyorrhée de forme ischémique permet de déceler des états pathologiques des glandes endocrines dont le rôle dans l'assimilation la fixation

ou la soustraction du Ca est aujourd'hui bien connu.

Il est à noter qu'il n'est pas, dans le squelette, un seul os qui réponde mieux à la loi de Kölliker que l'os alvéolaire.

Aussi, tout début de raréfaction osseuse diffuse se manifeste-t-il au niveau de l'os alvéolaire et la pyorrhée de forme ischémique, si facile à constater, est-elle appelée à jouer un rôle de signal d'alarme en révélant au médecin et à l'endocrinologue un trouble du métabolisme du Ca ou un dysendocrinisme dont il lui appartient de préciser la nature.

B/ La pyorrhée de forme inflammatoire relève indiscutablement de la loi No 2.

La raréfaction locale, régionale de l'os alvéolaire est provoquée et entretenue par l'infection génératrice d'hyperémie à son contact. L'examen de l'état général des malades qui en sont atteints révèle inmanquablement un état infectieux subaigu ou chronique, concomitant ou antécédant, à point de départ ou localisation habituellement digestive ou paradigestive.

Une relation directe entre le foyer infectieux gingival et un autre foyer de même nature, antécédant et éloigné, existerait-elle pas? L'infection de la gencive au lieu de se produire de dehors en dedans, du milieu buccal vers le périodonte, n'aurait-elle pas lieu au contraire de dedans en dehors, venue par voie hémato-gène, d'un foyer éloigné? J'ai souligné tout à l'heure ce qu'avait de peu plausible le premier mode pourtant généralement admis. En irait-il de même pour le second? On ne voit pas, à priori, pourquoi serait refusé à la gencive un mode de contamination reconnu en médecine générale pour d'autres organes et notamment pour l'un d'eux qui a avec la gencive de curieux apparentements, l'amygdale.

Placée entre les piliers du voile, l'amygdale baigne dans le même milieu salivaire et microbien. Sa constitution histologique offre avec la gencive des analogies, puisque Retterer a pu montrer qu'il existe dans le pont muqueux interdentaire des éléments lymphoïdes, moins

différenciés sans doute que les follicules clos de l'amygdale, mais suffisamment développés pour qu'il les ait appelés amygdales ou tonsilles gingivales.

Cliniquement, l'amygdale est le siège de poussées inflammatoires subaiguës ou chroniques. Elle présente des foyers cryptiques avec suppuration prolongée et des concrétions calcaires macro et microscopiquement voisine du tartre dentaire.

Or les otolaryngologistes reconnaissent que l'inoculation directe de l'amygdale par les germes habituels de la cavité buccale et notamment par les fusospires ne donne rien au point d'inoculation. En opposition, dans l'amygdale, les manifestations locales de l'infection, tumeur, chaleur, rougeur et douleur, sont précédées par des phénomènes généraux : température, courbature, ce qui montre qu'il s'agit d'une infection générale à localisation ultérieure amygdalienne.

Dans bien des états pathologiques, l'infection amygdalienne est nettement secondaire et tributaire d'un état infectieux initial de premier plan ; amygdalite dite appendiculaire, amygdalite des maladies infectieuses, scarlatine, rhumatisme, grippe, etc.

Aussi les otolaryngologistes ne mettent-ils pas en doute l'infection de l'amygdale par voie sanguine.

Pourquoi la gencive, si étroitement apparentée à l'amygdale par sa situation anatomique, sa composition histologique et ses manifestations pathologiques, ne s'infecterait-elle pas aussi par voie sanguine ? Ce sont ces remarques de simple bon sens qui ont été à la base de mes recherches sur la pathogénie de la pyorrhée.

Pour confirmer sur le plan bactériologique ce que la clinique me montrait probable, c'est-à-dire que, dans la pyorrhée inflammatoire, les germes viennent secondairement d'un foyer éloigné, par voie sanguine, à la gencive où leur présence dans les lacs sanguins de l'éponge gingivale, véritables points morts de la circulation, se révèle dès le début par la gingivite annonciatrice de la pyorrhée j'ai été amené à mettre au point le test auquel j'ai donné le nom "d'hémoculture gingivale." Il peut se définir "la culture du

sang obtenu par ponction des lacs sanguins irrigant le gencive aux points cliniquement sièges d'une hyperhémie visible consécutivement à l'infection microbienne de la gencive. Le temps me manque ici pour entrer dans le détail de sa technique. Je l'ai publiée pour la 1ère fois dans un mémoire présenté à l'Académie de Médecine de France, qui m'a décerné à cette occasion le prix Magitot, en 1932.

L'idée de procéder à un prélèvement pour hémoculture peut paraître à première vue hardie à tout bactériologiste.

Je n'ai pas échappé moi-même à cette appréhension, mais plusieurs milliers d'hémocultures, la valeur des faits et des résultats obtenus m'en ont libéré. Voici d'ailleurs quelques faits bactériologiques aisément contrôlables par tous.

Dans les tubes ensemencés par le prélèvement de sang gingival, on n'observe que des cultures d'un seul et même microbe, si, bien entendu, la technique a été correcte. Le plus souvent, il s'agit de germes appartenant au groupe des streptocoques, entérocoques, parfois staphylocoques, très rarement colibacilles.

L'hémoculture pratiquée sur un sujet à gencives saines cliniquement est invariablement négative.

Un frottis à la surface de la muqueuse gingivale, sans aucune précaution aseptique, n'ensemence généralement aucun germe ; s'il cultive quelque chose, il ne s'agit que de champignons, ou de rares colonies de microbes saprophytes banaux et habituels de la bouche. Le microbe révélé par l'hémoculture gingivale n'est pas accidentel mais bien réellement spécifique. Le malade présente en effet une intradermo-réaction positive au microbe prélevé dans sa gencive à l'exclusion de tout autre. A titre d'exemple, je rappellerai les constatations faites par le Pr. Guy Laroche et consignées dans la thèse de son élève Ricoux : "Septicémies veineuses subaiguës et infections de la région gingivo-dentaire, 1937." Chez deux malades atteints de septicémies veineuses subaiguës, Guy Laroche décida de vérifier l'efficacité de l'hémoculture gingivale pour déceler le microbe responsa-

ble. Dans les deux cas, l'hémoculture gingivale donne un entérocoque en culture pure. Les deux malades subissent l'épreuve de l'intra-dermo-réaction à divers germes, notamment l'Eberth et le Staphylocoque. Chez les deux, elle reste négative. L'intradermo-réaction chez le malade A. est encore négative avec l'entérocoque du malade B. et, réciproquement, celle faite chez le malade B. avec l'entérocoque du malade A. En revanche, chacun présente une réaction fortement positive à son propre microbe.

Dès les premières injections du vaccin fait en partant du microbe révélé par l'hémoculture gingivale, on observe presque toujours une réaction focale, brève mais nette. C'est, par exemple, une poussée de colique accusée chez des malades atteints d'appendicite ou de cholécystite avec pyorrhée ou encore, comme dans les cas de septicémies veineuses subaiguës de tout à l'heure, de périphlébite au niveau du dernier foyer de phlébite.

On observe encore des phénomènes allergiques qui témoignent bien d'une sensibilisation de longue date au germe révélé par l'hémoculture gingivale. Voici, par exemple, un malade atteint d'une colite infectieuse avec pyorrhée; un streptocoque est isolé par l'hémoculture gingivale et le vaccin administré à dose trop élevée détermine l'apparition d'un eczéma généralisé.

La preuve la plus convaincante de l'identité du germe trouvé dans le sang de la gencive avec celui du foyer infectieux initial et éloigné est fourni par le prélèvement de ce même germe à ce niveau à l'occasion, d'un acte chirurgical. Cette constatation, que j'ai faite bien souvent, est facile à réaliser par tous.

A ce sujet, je résumerai une observation particulièrement éloquentة publiée par François Moutier. Elle concerne un homme de 51 ans avec antécédents infectieux particulièrement chargés (entérite, endocardite, phlébites répétées, accidents pleuro-pulmonaires), porteur d'un syndrome d'anémie grave, dont le début remontait alors à 18 mois, avec hémorragies duodénales incoercibles.

On soupçonnait le rôle d'un strepto-

coque hémolytique identifié quelque temps auparavant à l'occasion d'une cholécystite suppurée opérée d'urgence. Toutes les recherches pour le retrouver étaient restées vaines. L'hémoculture gingivale fournit en culture pure ce streptocoque qui présentait en effet une très forte activité hémolytique. L'administration d'un auto-vaccin transforma rapidement une situation considérée alors comme désespérée.

Enfin l'efficacité de l'auto-vaccin fait avec le microbe de l'hémoculture à la fois sur l'état général et gingival du même malade est peut-être le témoignage le plus convaincant de la spécificité du germe venu à la gencive par voie sanguine.

En voici un exemple: A ma consultation de pyorrhée, se présente à l'hôpital un malade dont l'aspect physique est impressionnant. De la racine des cheveux à la région sous-mentonnière et transversalement jusqu'à un travers de doigt des tragus auriculaires, son visage est le siège d'une dermatose monstrueuse.

Dans l'ensemble, elle est rouge vermillon avec une teinte plus sombre framboisée au niveau du nez et des pommettes.

L'épiderme est luisant, hérissé de papules, parsemé de petites érosions, les unes suintantes, les autres croûteuses. Au toucher, le derme est infiltré de nodosités correspondant aux papules.

Le cuir chevelu est rempli de plaques rouges vif présentant des lésions du même ordre séparées par des aires de peau saine.

Tous les traitements tentés depuis 15 ans ont échoué.

M. M. L. est d'ailleurs résigné à ce qu'il considère comme une infirmité incurable et ne vient consulter que pour une pyorrhée de forme inflammatoire chronique, caractérisée par des lésions à tous les stades, clapiers de 2 à 6mm, suppuration abondante, tartre, mobilité, etc.

L'examen général révèle une colite infectieuse chronique fort ancienne avec constipation opiniâtre. L'examen des selles met en évidence des fermentations

et des putréfactions très accusées (acides organiques, 20 cc ammoniaque 5/2).

L'hémoculture gingivale fournit un entérocoque en culture pure. Le vaccin est administré par voie intradermique, à raison de deux fois par semaine, en commençant par 2 gouttes pour atteindre 1/2 cc. A ce moment, le malade accuse une amélioration très notable de son asthénie. Chaque piqure provoque une recrudescence du prurit au niveau du visage. L'état inflammatoire gingival est nettement amélioré sans encore aucun traitement local.

Dix jours plus tard, l'amélioration est spectaculaire. Les lésions cutanées rebelles ont regressé des trois quart. Le nez et les pommettes seuls présentent une coloration jambonnée. Une deuxième hémoculture gingivale est pratiquée et fournit à nouveau un entérocoque.

Notons que dans ce prélèvement de sang, comme dans celui pratiqué initialement, le sérum agglutine les deux échantillons d'entérocoques au même taux particulièrement de 1 pour 1200.

A partir de ce moment, le malade ne cesse de s'améliorer.

Revu dans le service au bout de cinq mois, il se présente avec un visage normal qui lui permet de reprendre une activité professionnelle à laquelle il avait renoncé. Le traitement local est alors entrepris.

Si je donne cette observation parmi bien d'autres, c'est, non seulement parce qu'elle présente un côté spectaculaire, mais aussi parce qu'elle a été suivie par tous les confrères et les élèves qui assistent à la consultation de l'Hôpital Lariboisière, à Paris.

Je souhaite que ce trop bref aperçu de mes recherches sur la pyorrhée vous incite à me suivre dans la voie où je me félicite, pour ma part, de m'être engagé, en raison des résultats thérapeutiques auxquels elle m'a conduit. Il ne s'agit pas ici de conceptions imaginatives, d'idées personnelles, mais de faits cliniques et thérapeutiques contrôlables. Si la pyorrhée s'identifie bien à la pathologie de l'os alvéolaire et obéit visiblement aux lois de la pathologie osseuse, elle n'est pourtant pas une maladie locale, sans apparentement avec l'état général des malades qui en sont atteints. Elle apparaît comme l'un des symptômes d'états pathologiques généraux dont dépend son apparition, sa forme clinique et son évolution.

Placée dans son véritable cadre, la pyorrhée doit rapprocher le médecin et le praticien de l'art dentaire. Elle a toute l'importance d'un signe révélateur d'une maladie générale, méconnue, négligée ou imprécisée. Elle apporte, dans sa forme inflammatoire, des ressources thérapeutiques toujours utiles et parfois salvatrices. Si le temps me manque pour aborder aujourd'hui le traitement de la pyorrhée, tel que ces notions nouvelles me l'ont fait concevoir, je ne vous surprendrai pas en affirmant qu'il n'est pas plus possible de prétendre guérir ou plutôt enrayer la pyorrhée, maladie de l'os alvéolaire, par le seul traitement local que par le seul traitement général. C'est uniquement la conduite harmonieuse des deux qui permet d'obtenir des résultats non seulement réels mais surtout durables.

les 19, 20, 21 octobre . . .

à Montréal, Hôtel Mont-Royal . . .

Congrès annuel de l'Association Dentaire Canadienne . . .

dates à retenir . . .

l'événement dentaire de l'année . . .

Discours du Souverain Pontife aux membres du XXVII^e Congrès italien de stomatologie⁽¹⁾

Les manifestations du XXVII^e Congrès italien de stomatologie et de la première Triennale internationale de prothèse dentaire vous ont rassemblés, cette année, en grand nombre dans la Ville Eternelle, où ont tenu aussi à vous accompagner beaucoup de vos familles, attirées par les beautés incomparables de cette Rome qui, (mère des peuples)—ainsi qu'on l'a appelée—en conserve toujours la main caressante et la magnanime volonté. Nous vous accueillons avec une vive satisfaction, heureux de pouvoir dire encore une fois l'intérêt que Nous portons à vos travaux, dans lesquels Nous admirons et l'action de l'esprit, toujours tendu vers de nouvelles conquêtes, et celle du coeur, humainement et chrétiennement soucieux de prévenir et de soulager les infirmités de nos frères.

Vous voici ainsi devant Nous, illustres savants, qui comptez parmi les plus représentatifs de votre branche spéciale en Italie et au dehors, directeurs de clinique, chirurgiens et chercheurs très renommés, amis des arts et serviteurs passionnés de la science. L'un des caractères de la civilisation moderne et la gloire de notre époque c'est l'organisation de Congrès scientifiques nationaux et internationaux comme le vôtre. Une grande partie de la rapidité et de la sûreté du progrès scientifique actuel est due, en effet, à la collaboration organisée entre savants de toutes les nations qui, mettant en commun les connaissances et les capacités de chacun, obtiennent les heureux résultats qui, sans cela, ne resteraient qu'un rêve; des études hardies et des expériences couronnées de succès demeurerait comme des fragments épars d'une oeuvre, qui attendraient l'écoulement de nombreuses années avant de prendre corps et vie. Mieux, peut-être, que les publications,

même les plus soignées, les conversations et les discussions personnelles dans les Congrès de spécialistes se sont avérées désormais d'une utilité sans pareille, à laquelle la qualité et le nombre des personnalités présentes ici aujourd'hui rendent un éloquent témoignage. De telles assemblées fournissent par ailleurs aux techniciens un abondant matériel et des enseignements de première main. Quelle aide, par exemple, apporte dans une conférence la projection de photographies, de micrographies, de radiographies, de "films," obtenus et commentés par le rapporteur lui-même.

Il n'est pas nécessaire que Nous rappeillions combien important et délicat est l'ensemble physiologique qui forme l'objet de vos études et de votre assemblée: la bouche. Sa structure et ses caractéristiques ne le cèdent pas aux autres admirables organes vitaux dans la manifestation de la prévoyante disposition et de la sagesse du Créateur, qui, dans un espace exigü, a groupé les fonctions les plus variées, depuis celles qui servent à la nutrition jusqu'à celles qui constituent le moyen ordinaire pour exprimer des pensées et des sentiments. Il ne serait pas hors de propos de parler d'une fonction quasi sacrée de la bouche, car elle est, en quelque façon, un instrument de la communication du divin, ainsi qu'il arrive lorsque par la parole est diffusée l'éternelle vérité, ou encore dans les sacrements, quand elle est élevée à la dignité de moyen de transmission de la grâce et de l'union physique avec le Corps du Christ. Bien plus, le langage humain est attribué à Dieu lui-même par les Livres saints, où à d'innombrables reprises revient l'expression, en vérité anthropomorphiste, de *os Domini, ex ore Altissimi*, c'est-à-dire: sublime, divine

(1) Traduit par M. J. Thomas d'Hoste de l'italien dans l'Osservatore Romano (25. 10. 1952). Le Pape a reçu en audience particulière, le 23 octobre 1952, à Castel Gandolfo, un nombre imposant de savants, de professeurs, de directeurs de cliniques dentaires, etc., ayant participé au XXVII^e Congrès italien de stomatologie et à la première triennale internationale de prothèse dentaire.

bouche, de laquelle jaillissent les vérités, les avertissements, les promesses de Dieu aux hommes, et de laquelle aussi l'âme extatique du Cantique des cantiques attend, avec un tendre et émouvant désir, le baiser mystique: *Osculetur me osculo oris sui* (*Cant.*, I, 1). Et dans le Nouveau Testament, lorsque le premier évangéliste notait soigneusement que Jésus, ouvrant sa bouche, enseignait: *aperiens os suum, docebat* (*Matth.*, v. 3) peut-être voulait-il indiquer la grandeur de l'heure où s'ouvrit enfin la sublime et divine bouche du Fils incarné, communicatrice de la sagesse éternelle elle-même et de l'amour miséricordieux. Combien donc, cette partie vitale du corps humain est un digne objet de vos fatigues scientifiques et des mesures que vous entendez réaliser dans une proportion toujours plus grande pour prévenir et guérir ses maux.

Aussi, en parcourant avec une particulière attention le programme de votre double Congrès, avons-Nous noté avec une vive satisfaction, dans le premier sujet, votre délicat souci d'apporter les soins les plus assidus à l'enfance, spécialement à la plus pauvre et à la plus abandonnée. Dans de semblables réunions nationales et internationales, l'autorité des participants permet de promouvoir avec plus de chance de succès, auprès des pouvoirs publics et de l'opinion publique, les mesures et les institutions appropriées d'intérêt général, qui dépassent les possibilités et les ressources des entreprises privées.

Vous désirez voir établir des dispensaires et des moyens d'assistance odontologiques pour l'enfance, et Nous savons que vous serez prêts à apporter plus largement votre concours à mesure que les installations nécessaires pourront être équipées. Les chers petits enfants, à combien de maux et de misères ils peuvent être sujets! Maux qui, entre autres, éteignent et déforment sur leurs lèvres ce sourire, l'une des plus belles choses que Dieu ait données à la terre. Troubles locaux et généraux de la première dentition, anomalies de forme, calcification défectueuse des dents, processus d'infection, et tant d'autres altérations des dents

et de la bouche exigent votre assistance et en manifestent l'aspect hautement social, qui constitue la matière privilégiée de vos assemblées.

Comme vos collègues de médecine générale, vous aussi vous rencontrez des tumeurs et des ulcérations des tissus mous dans la bouche qui, spécialement dans les formes cancéreuses, sont l'un des objets d'étude particulière dans vos Congrès. Le cancer, ce terrible mal sur lequel se penchent tant de savants et de professionnels désireux d'en dévoiler la cruelle énigme, porte ses dévastations même dans la bouche; il concerne donc la stomatologie elle-même. Là comme ailleurs, il occasionne ordinairement une cachexie ou état d'altération et de dégénérescence progressive dans les conditions de tout l'organisme, et, de cette façon, votre branche spéciale est en étroite collaboration avec la médecine générale, à laquelle elle apporte de précieux éléments d'expériences et de solutions, fussent-elles encore partielles. Ainsi, tous les membres de la grande famille médicale s'aident et se soutiennent mutuellement dans leurs efforts pour rechercher et découvrir les causes profondes des maladies et pouvoir, de cette manière, donner de salutaires normes thérapeutiques et hygiéniques,

Cependant, quels que puissent être les progrès souhaités dans l'art de prévenir les maux que vous soignez, l'intervention chirurgicale peut devenir souvent nécessaire et opportune, soit dans le palais de la bouche, soit dans le bas de la bouche, soit dans le tissu gingival; parfois même, elle doit être très prompte. Parmi les services que les merveilleux progrès de la chimie ont rendus et rendent encore à la science et à l'art médical, les analgésiques et les anesthésiques ont une part très importante, et c'est pourquoi ils constituent l'argument d'un autre des sujets de votre Congrès, soit en général, soit en particulier, dans le domaine de la stomatologie. La proverbiale terreur que l'on éprouvait, assis dans le fauteuil du dentiste, à la seule vue de la fraise ou du syndesmotone, du davier ou de la pince pour l'extraction des dents,

diminuera de jour en jour. Mais comme les appréhensions d'un grand nombre de patients sont encore bien vives, vous devez assez souvent recourir à des anesthésies générales ou locales qui, en apportant aux patients craintifs le soulagement désiré, vous permettent d'opérer d'une main sûre et avec plus de succès.

La première Triennale internationale de prothèse dentaire comprend une partie de démonstrations pratiques et une "Exposition rétrospective" de l'odontologie et de la prothèse. Cette Exposition montrera même aux profanes quels efforts ingénieux ont été accomplis depuis les époques les plus reculées pour délivrer les hommes des douleurs lancinantes du mal de dents. Mages et médecins multipliaient les pratiques et les recettes, dont les anciens livres de médecine ont conservé de bien curieux exemples. Mais quelques praticiens plus habiles avaient déjà, avant l'ère chrétienne, exécuté de véritables prothèses selon des méthodes ne différant pas de celles d'aujourd'hui. N'a-t-on pas trouvé, par exemple, dans un tombeau étrusque, un crâne avec des ligatures de dents en or? C'est ainsi qu'on a pu écrire d'importants ouvrages historiques sur les prothèses dentaires dans l'antiquité. Mais c'est en des temps plus récents que s'accomplit la profonde transformation de l'odontologie, après le progrès général de l'industrie et des sciences physiques et chimiques. Alors que les chirurgiens des siècles passés n'avaient à leur disposition que des instruments manuels, aujourd'hui, une technique et un matériel mécanique perfectionnés permettent l'exécution, dans le cabinet dentaire ou au laboratoire, de travaux auparavant impossibles à effectuer.

Cependant, l'action de l'odontologie moderne n'est pas circonscrite à la seule région dentaire, elle s'étend encore, en de nombreux cas, aux autres parties de la cavité buccale, et même souvent à l'état pathologique d'organes même éloignés et aux conditions de l'organisme tout entier. Son action n'est pas non plus purement technique, car rien ne remplacera jamais l'habileté et la perspicacité qui font de la prothèse dentaire et de la chi-

rurgie buccale un art très délicat, attendu que chaque patient représente un cas particulier. Mais vous ne faites jamais exactement un travail identique, ou, comme on a coutume de dire, le travail en série; c'est pourquoi il y a toujours quelque chose d'artistique, qui fait appel aux facultés inventives, dans votre profession. Celle-ci doit nécessairement fondre ensemble la science du médecin qui étudie les causes biologiques et les moyens thérapeutiques des maladies des dents avec l'art du chirurgien. Le temps où quelques médecins affectaient un certain mépris pour le dentiste est désormais bien loin, et c'est à bon droit qu'a été substitué le terme de stomatologie aux mots qui désignaient auparavant votre branche. Vous veillez sur ce que l'on peut appeler la porte principale de l'organisme, si sensible aux facteurs extérieurs, sachant bien que la régulière conformation et le bon état de la bouche sont de la plus grande importance, non seulement pour la mastication, pour les fonctions digestives et pour la respiration, mais encore au delà de l'ordre physiologique, pour la prononciation, pour l'art oratoire, et, en général, pour le décorum extérieur de la personne. Aussi, les stomatologues qui observent un nombre toujours plus grand de déformations de la bouche en sont venus à créer une nouvelle science, l'orthopédie dento-maxillofaciale, qui bien souvent peut efficacement intervenir durant la croissance de l'enfant, au moment où il est encore temps d'aider la nature à se développer normalement.

Désireux comme Nous le sommes autant que vous, que le perfectionnement de l'homme soit favorisé non seulement dans les régions de l'esprit, mais encore dans son physique et dans ses organes afin que resplendisse davantage en lui, roi de la création, la sagesse du Créateur, Nous souhaitons que votre Congrès, comme les autres, nationaux et internationaux, semblables au vôtre, contribue efficacement à atteindre ce but. En particulier, Nous souhaitons au présent Congrès que, mettant toujours plus en lumière la beauté et l'importance de votre activité, il stimule encore plus les re-

cherches, "facilite les échanges et la mutuelle compréhension, et, comme résultat d'une plus vaste portée, qu'il renforce les liens entre les nations et favorise le travail dans la paix, pour le bien de l'humanité tout entière. Telles sont les grâces que Nous implorons de Dieu pour vous,

tandis que, de grand coeur, Nous vous donnons à vous, à vos familles, à vos travaux, à vos oeuvres, Notre Bénédiction apostolique.

*La Documentation
Catholique, le 14
décembre 1952.*

Nouvelles des Sociétés

Société Dentaire de Montréal

Séance de décembre

Cette réunion qui avait lieu en l'Hôtel Windsor était rehaussée de la présence du Dr Abraham, le nouveau président du Collège des Chirurgiens-Dentistes. Le programme consistait en la représentation de deux films en couleurs sur les troubles de l'articulation temporo-mandibulaire.

Le premier, don du Dr Harry M. Sel-din à la faculté de chirurgie dentaire de l'Université de Montréal, présente une revue de l'anatomie de la région concernée à l'aide de la dissection d'un spécimen. Le film traite ensuite de la luxation, de l'équilibration de l'occlusion et des injections dans la région temporo-mandibulaire.

Le second film, du Dr Antoine Raymond, illustre l'opération d'un cas d'ankylose osseuse au niveau de l'articulation temporo-mandibulaire opéré par lui-même et réalisé par le Dr Henri Brouillette. Il y est démontré d'une façon claire et concise qu'un patient souffrant d'ankylose unilatérale au niveau de cette articulation peut recouvrer la fonction de mastication.

Ce programme, d'une très belle tenue scientifique, fut suivi d'un coquetel réunissant tous les dentistes présents ainsi que leurs hôtes, les représentants des différentes maisons dentaires.

Séance de janvier 1953

L'année nouvelle débutait par une séance d'un caractère inusité: les membres de la Société Dentaire de Montréal se sont réunis en grand nombre à l'Hôpi-

tal du Sacré-Coeur, à Cartierville, durant la matinée, pour étudier ensemble des questions relevant de soins dentaires donnés dans les hôpitaux.

Le premier item au programme consistait en une session dans l'amphithéâtre d'une salle d'opération où l'assistance put surveiller une intervention chirurgicale majeure. En l'occurrence, le Dr Georges Deshaies effectuait une thoracoplastie chez un patient tuberculeux et les dentistes présents purent se rendre compte de l'aseptie qui règne dans une salle d'opération et le travail d'équipe nécessaire à la perfection d'une intervention de chirurgie.

Cette partie du programme, quoique du domaine exclusivement médical, illustre une façon de favoriser la guérison d'une infection tuberculeuse.

La deuxième phase du programme scientifique comprenait une série de courtes communications présentées dans la salle des conférences de l'Hôpital. Après le discours de bienvenue du directeur médical, le Dr Fernand Hébert, le président de la Société Dentaire, le Dr Roger Charette, nous présente le premier conférencier, le Dr Maurice Doray, qui traite des "Réactions allergiques aux antibiotiques et leurs traitements." La streptomycine fait d'abord l'objet de commentaires et offre trois genres de réactions: cutanée, thermique et nerveuse. La terramycine et l'auroéomycine peuvent causer des troubles digestifs, tandis que la chloromycétine peut occasionner des ennuis d'ordre amnésiques. La pénicilline, tout en étant peu toxique, peut cependant causer de l'oedème, des réactions cutanées, de la fièvre à 104° et 105°,

des dermites, des sensations de brûlures, etc. Le Dr Doray souligna en passant que les gommes à mâcher et les dragées à base de pénicilline sont dangereuses à administrer à cause des stomatites qui peuvent en résulter et surtout de la résistance qu'elles peuvent provoquer. Les traitements les plus appropriés à ces genres de réactions sont les antihistaminiques, les sédatifs et la cortisone.

Les sulfas, sans être à proprement parler des antibiotiques, s'apparentent à ceux-ci et peuvent provoquer certaines réactions toxiques ou de sensibilité, dont les plus connues sont: nausées, céphalées, température, dermatose, cyanose et blocage rénal. Dans ces cas, le recours à l'acide nicotinique peut être d'un grand secours.

Le deuxième conférencier, le Dr J. Armand Sénécal, nous présente trois cas de fracture traités à l'Hôpital. Selon le Dr Sénécal, le patient tuberculeux victime d'une fracture de l'un des deux maxillaires ne souffre pas de retard dans sa guérison à cause de sa maladie.

Enfin, le Dr Robert De Plaen nous fit part de certaines observations d'intérêt dentaire à l'Hôpital du Sacré-Coeur. Faisant un parallèle entre le tuberculeux et le patient du service d'orthopédie, il note que le premier, ayant souvent souffert

d'un état pathologique au moment de la calcification de ses dents, présente souvent des caries nombreuses et à marche rapide, un os alvéolaire poreux, donc des dents faciles à extraire et des troubles de gencives. Par contre, le patient du service d'orthopédie se présente habituellement au dentiste avec des dents solides, un os bien calcifié compliquant souvent une extraction à cause des traitements de calcification imposés à l'organisme. Les hypersensibilités au collet des dents sont aussi moins notables que chez le tuberculeux. La condition de ces patients ne semble pas provoquer de troubles au niveau des gencives.

A la fin des conférences, le Dr Roger Charette remercie les autorités de l'Hôpital pour leur hospitalité et offre au docteur Hébert un chèque pour la clinique dentaire de l'Hôpital.

Pour clore la séance, les membres de la Société retournèrent à la salle d'opération où le Dr Gérard de Montigny démontrait une technique chirurgicale pour redonner à un maxillaire déformé un contour normal en vue d'une prothèse stable et rétentive. Au moyen d'un microphone, le chirurgien put expliquer à l'assistance retranchée derrière un amphithéâtre vitré les différentes phases de l'intervention à mesure qu'elle se déroulait.



Nouvelles de l'Association

La fluoruration des eaux des aqueducs dans le but de prévenir en partie la carie dentaire

Un Comité conjoint de l'Association Dentaire Canadienne et l'Association Médicale Canadienne a élaboré la déclaration suivante pour répondre au grand nombre de demandes de renseignements au sujet de la fluoruration des eaux des aqueducs, comme mesure de santé publique.

Qu'est-ce que la fluoruration?

Le terme "fluoruration", tel qu'employé ici, signifie l'addition d'un composé de fluorure à l'eau. Certaines eaux sont naturellement fluorurées à cause du sol et des cailloux qu'elles rencontrent sur leur passage. Depuis 1945, plusieurs municipalités ont augmenté la teneur de leurs eaux d'aqueduc en fluorure d'une partie par million (p.p.m.) par l'addition artificielle d'un composé de fluorure. A ce niveau, les dents en tirent le meilleur bénéfice et la santé en général n'en souffre pas.

Que peut faire la fluoruration?

Il est prouvé que les enfants qui vivent dans des municipalités où l'eau a été additionnée de fluorure à 1 p.p.m., en 1945, souffrent beaucoup moins de la carie dentaire que ceux qui résident dans des villes où l'eau ne contient pratiquement pas de fluorure. On sait que la protection contre la carie accordée par de l'eau naturellement fluorurée se prolonge jusqu'à l'âge adulte; cependant, on ne peut encore dire si l'eau fluorurée artificiellement donne les mêmes résultats.

Que coûte la fluoruration?

On procède à la fluoruration par des appareils automatiques qui déversent dans l'eau les quantités requises de fluorure; ces machines font partie de l'équipement ordinaire des systèmes d'aqueducs. Un personnel qualifié surveille l'exactitude des quantités de fluorure mêlées à l'eau.

Le coût de l'équipement, des fluorures et de leur manutention varie d'un endroit à un autre et d'une période à l'autre. On suggère de se renseigner sur cette question auprès des ingénieurs des aqueducs ou des manufacturiers de ces appareils.

Quels risques court-on?

Jusqu'à présent, les statistiques ne rapportent pas d'effets nuisibles quand la concentration des fluorures ne dépasse pas 1 à 1.2 p.p.m. Dans certaines régions où l'eau renferme naturellement une proportion d'environ 15 p.p.m., les dents de certains enfants ont souffert de légère fluorose ou de taches à peine perceptibles par des observateurs expérimentés.

La plupart du temps, la plus grande source de fluorures provient de l'eau, les aliments n'en contenant que très peu. Mais il peut en être autrement, car certains aliments renferment de grandes proportions de fluorures. L'ingestion de fluorures peut aussi augmenter par la consommation de substances où on a ajouté intentionnellement des fluorures, telles que dragées, losanges, pâtes dentifrices ou la gomme à mâcher. Certaines usines peuvent aussi favoriser, à cause de l'emploi qu'elles font des fluorures, l'absorption de ces substances; l'entourage de ces endroits peut aussi en ressentir des effets. Quand il s'agit de fluorurer les eaux des aqueducs, il faut songer à tous ces facteurs et se rendre compte des sources possibles de fluorures autres que l'eau de consommation. Il ne faut pas que la dose totale devienne excessive.

Plusieurs questions sont encore sans réponse quand il s'agit de fluoruration. C'est pourquoi, les recherches dentaires et médicales se poursuivent.

Comment procéder?

Les municipalités qui se proposent cette mesure feraient bien d'abord de discuter la question avec les organismes dentaires, médicaux et du génie sanitaire. Les municipalités doivent étudier le problème en tenant compte de leurs disponibilités

respectives et trouver des solutions qui leur sont propres; plusieurs facteurs doivent entrer en ligne de compte. Parmi ceux-ci, il faut penser à établir un critère scientifique qui permette de juger des effets d'un tel programme en se basant sur des rapports périodiques qui seront analysés par les organismes chargés de la santé publique.

Liste des membres du comité conjoint:

Dr J. B. Macdonald, faculté de chirurgie dentaire, Université de Toronto, président;

Dr E. H. Bensley, Hôpital Général de Montréal, vice-président;

Dr H. K. Brown, division d'hygiène dentaire, Ministère de la Santé nationale et du Bien-Etre social, Ottawa;

Dr Malcolm Brown, Kingston General Hospital, Kingston;

Dr A. L. Chute, Hospital for Sick Children, University Avenue, Toronto;

Dr R. Grainger, Ministère de la Santé publique, Edifice du Parlement, Toronto;

Dr Gordon Nikiforuk, Faculté de chirurgie dentaire, Université de Toronto;

Dr L. B. Pett, Division de la nutrition, Ministère de la Santé nationale et du Bien-Etre social, Ottawa.

Note: Les institutions, dont font partie ces membres, n'endossent pas nécessairement cette déclaration.

Les membres du comité conjoint ont demandé qu'on ne publie pas de photographies.

La Société Dentaire de Montréal

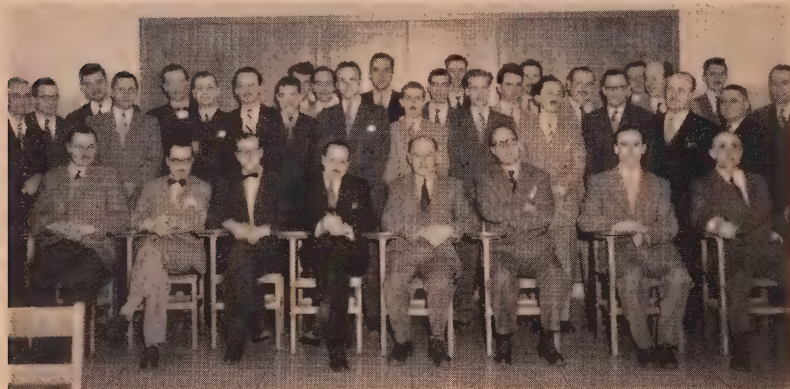


Photo prise à l'Hôpital du Sacré-Coeur, de Cartierville, à l'occasion d'une séance d'étude de la Société Dentaire de Montréal, tenue le 20 janvier 1953.

Sur la première rangée, de g. à d., on remarque les Drs J. Armand Sénécal, conférencier, Jacques Demers, chargé des programmes scientifiques de la Société, Maurice Doray, conférencier, Roger Charette, président de la Société, Fernand Hébert, directeur médical de l'Hôpital, Gérard de Montigny, chef du Service de chirurgie dentaire de l'Hôpital et clinicien de cette séance, Vincent Tremblay, secrétaire de la Société, A. Plessis-Bélair, directeur du Dépôt Dentaire Limitée.



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The ideal life, the life of full completion, haunts us all. We feel the thing we ought to be beating beneath the thing we are.—Phillips Brooks.

Therefore—it will help to attend this Convention



JOHN B. MACDONALD, D.D.S., M.S. (ILL.)
Toronto, Ontario

Chairman, Division of Dental Research, Faculty of
Dentistry, University of Toronto.

Chairman, Research Committee, Canadian Dental
Association.

Member (and Past-President Toronto Chapter)
International Association for Dental Research.

Member, Associate Committee on Dental Research,
National Research Council.

Member, American Association for Advancement of
Science.

Member, Canadian Society of Microbiologists



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The Dentist's Responsibility to the Child Patient

by GORDON H. ROVELSTAD, D.D.S., M.S.D., Northwestern University, Chicago, Illinois

DURING the week of December 3, 1950, some 5,000 people met in Washington, D.C., at the invitation of the President of the United States to centre the nation's attention on the needs of children. This meeting, the fifth of its kind since the turn of the century, was called The Mid-Century White House Conference on Children and Youth. Its focus was, "to consider how we can develop in children the mental, emotional, and spiritual qualities essential to individual happiness and to responsible citizenship, and what physical, economic and social conditions are deemed necessary to this development."

"This, focus, centring on the individual child, reflects the dominant theme of our society which has been unfolding for the last 50 years; that the increasing complexity of life in the 20th century has created many problems; that these problems concern individuals, but not apart from their social setting; that society has an obligation toward the individual as well as the individual toward society; and that man's health and his lack of it are social products."¹

These White House conferences have been citizens' conferences in which local experience for the preceding ten years is pooled and discussed under the prestige of an invitation from the president. The topics for discussion at these conferences have largely been programs that were started in local

communities. The success of these local efforts as they became known welled into national movements which many times led to the passage of legislation aimed to improve services to children. Oral health services have been a part of these programs.

The place of oral health services in the recommendations of each of these succeeding conferences was raised in its importance and scope with the passing of each decade. This was in keeping with the knowledge attained by dental science in the understanding of dental disease. It was also in keeping with the expansion of public interest in oral health for children. This public interest can also be demonstrated by the frequency with which current magazines and newspapers devote major articles to dental health of children. By all counts national interest has been aroused in the dental health of children as it never has before. Numerous research studies have been centred around dental diseases as they involve children. Dental education is more than aware of the problems evidenced by the 1950 meeting of the American Association of Dental Schools at which time the dominant theme of the conference was the "Teaching of Dentistry for Children."

Many surveys of child dental health conditions have been reported and a great many facts are at hand which can prove a sound basis for an intel-

ligent evaluation of the question which we have asked ourselves today: "What is the dentist's responsibility to the child patient?"

John W. Knutson, Chief of the Dental Division of the U.S. Public Health Service, has stated that "of all the health service needs of the children of this country, the most universal are those caused by a wide range of dental defects or abnormal oral conditions. These conditions may be due to abnormal growth and development or they may be caused by disease of, or injuries to, the teeth, their supporting and associated structures."² He lists five major classifications into which these conditions fall, some being more prevalent than others. Dental caries, of course, is the most prevalent of all these diseases.

Thus we have a responsibility toward the management of the most common single health need of children in the face of a rising public demand. To what extent are we prepared to meet this problem?

Logically the basic dental needs of children today must be known before we can think out the various factors.

Prevailing dental needs of children under 19 years of age which by definition are those needs existing in the mouths of children at a given time can be summed up by the following statistics, which although not entirely up to date are recent enough to provide a fair analysis.

STATISTICS

In 1941 among the school children of Hagerstown, Maryland, between the ages of 6 and 19, the average child was found to have carious lesions on about 3 permanent tooth surfaces. At age 6 there was an average of 3 carious tooth surfaces of permanent teeth, at age 12 an average of 3.2, and at age 19 an average of 4.9.³

The study of more than a million elementary school children reported by the Guggenheim Dental Clinic revealed that the children averaged 5.3

carious primary and permanent tooth surfaces per child besides 1.3 teeth per child that were so severely involved that extractions were necessary.⁴

A series of examinations made by the Children's Fund of Michigan gave evidence, considering both permanent and primary teeth, that children between the ages of 6 and 16 had an average of 7 carious tooth surfaces per child and 1.7 teeth per child that needed extraction.⁵

Studies carried out by the State Health Department of Michigan revealed that the average child has 4.9 carious tooth surfaces with 3.0 of these involving permanent teeth.⁶

In some areas more than half of the two-year-old children have one or more carious primary teeth.⁷

In general, the permanent teeth begin to erupt when the child is about six years old. From that time on they are attacked by dental caries at a fairly constant incidence rate. At age 15, five to nine teeth have been attacked, and more than 90 per cent of children have had caries experience in their permanent teeth.⁸

There have been relatively few surveys of other conditions although some studies have revealed that approximately 40 per cent of school children present some form of malocclusion.^{9,10}

These figures present evidence for Dr. Knutson's statement. However, there is another phase of this problem that should be considered, and that is what would be considered under the term incidence of need, which by definition is the amount of new defects which develop within a given interval of time. For this we turn to the Committee on Dental Research of the American College of Dentists as of 1943, who pointed out that the approximately 45 million children in the U.S. are acquiring slightly less than one new cavity a year.¹¹

Knowing the nature of dental disease one can only suppose the terrific impact of this accumulation of dental needs in children to the dental health

of the adult population. Perhaps we can take some comfort from the suggestion that we are not as badly off as some other countries such as Newfoundland where it has been reported that in one group of children aged 16, 41 per cent had lost all, or nearly all, of their permanent teeth;¹² or in New Zealand where 60 per cent of the children 9-14 years of age were in such deplorable condition that their permanent teeth were beyond saving.¹³ However, we only have to remind ourselves of the failure of a large percentage of World War II draftees to meet the minimum dental standards first established, and we lose any sense of pride in the nation's dental health.

In the face of this tremendous need for dental services to children one would suppose that the demand for dental services for children would also be high. However, this has been shown to be only about 20 per cent of the need.

The American Academy of Pediatrics reported in 1949 that 95 per cent of the 84,000 dentists in this country render services to children.¹⁴ It further states that 25 per cent of the patients of these dentists are children, which is a close approximation to the ratio of children to the total population. However, all reports indicate that there is a wide gap between the dental needs of children and the type of care rendered. Since only one child in 50 receives dental care in a public clinic, facilities for rendering such care are almost solely provided by the private practitioner in his office. Since 20 per cent of the private practitioner's time has been shown to have been devoted to the care of children, it must be within this period that the most efficient treatment be carried out for the management of children. Although more time could not be expected without taking time away from the adult needs, the most effective use of this time could be expected toward the better health of children.

We further recognize that although

the dental population has increased twice as rapidly as the general population in the U.S. since 1900,¹⁵ the profession is far from adequately manned in order to meet all dental needs.

Dr. Stewart A. MacGregor has suggested some food for thought in the solution of this problem. He pointed out that in order for the dentists of the U.S. to keep up with the incidence of new cavities in children, they would only have to individually take care of 1.8 cavities per day on the basis of a 240 working-day year. On the other hand in order to catch up with the existing backlog of dental disease they would have to average 15.7 per day per dentist.¹⁶ This would be virtually impossible in view of the fact that the Child Health Services and Pediatric Education Report of 1949 indicates that the dental offices are averaging only 1.5 children per day.¹⁷

So, where do we go from here? We are faced with the realization that a tremendous need for dental care exists, the dental profession is apparently not in a position to provide more time than what it already is providing for the treatment of children, there is evidence that the demand is increasing for this health service; and there is some evidence that the incidence of dental disease in children is increasing.

Dr. Francis A. Arnold, Dental Director of the U.S. Public Health Service has pointed out that the problem more or less centres on the prevention of oral diseases.¹⁸ This means that in the average population group today, the task is centred primarily on the prevention of dental caries and periodontal disease; in children, dental caries. In applying this concept a number of approaches to prevention must be taken into consideration: specific techniques professionally applied, patient education, parent education, public health education, mass treatment on a public health scale, and the organization of these into a well functioning community health program.

Since the private practitioner is directly responsible for the first three

of these approaches, it will be these that provide the basis for my remaining remarks about the dentist's responsibility to the child patient together with consideration of the management of existing disease.

DENTIST'S RESPONSIBILITY

With the present knowledge of dental development the following can be stated without fear of contradiction: there is a definite pattern to the growth and development of the mouth throughout the childhood years which, if disturbed in any way, may predispose to a breakdown in the dental mechanism. There is a definite purpose for the primary dentition beyond that of function during the childhood period. The primary teeth not only serve as functional units for a period approximating twelve years, but they also serve as guides to the erupting permanent teeth. Lack of proper health of the primary teeth may lead to defective permanent teeth or permanent dental arches.

The health of the primary dentition is also an important factor in the overall health of the child. Poor function here can lead to poor nutrition. Dental infection can lead to systemic infection or systemic malfunction. Constant irritation and pain in the mouth of a child can lead to an unhappy disposition, lowered emotional stability, dulled mental acuteness, as well as lowered resistance to systemic disease. There is little doubt in anyone's mind that poor dental health of the disfiguring kind can lead to psychological problems in older children just as well as any other type of physical deformity. We all know the value of a smile.

In short we recognize the importance of the childhood years toward the development of a healthy adult mouth. We also recognize the importance of dental health to the general health and well-being of any individual child.

Now then, one of the first problems

we must consider is that of the management of existing dental disease. The primary teeth must be maintained in a healthy state until they are naturally shed and lost. In order to do that in the face of the high rate of dental caries, operative dentistry must be practised regularly and carefully. Carious teeth should be restored to anatomical form and function. There should be no difference in the standards of dental restoration because of age. In fact the rules established by Black for the proper preparation and restoration of carious teeth should be more applicable during the years of highest caries susceptibility than at any other time, and we know that period to be the childhood years. Choice of filling materials should be based on the length of service expected rather than the age of the patient. Developmental changes in the relations of the teeth to the gingival tissues should be taken into consideration when placing a restoration on a young permanent tooth in order to attain the longest period of serviceability.

Careful consideration must be given to the pulp of primary teeth in their management. The temptation to cap the pulp with filling material because the tooth involved is a primary tooth with a deep cavity must be very great, judging from the frequency with which dental x-rays reveal such a condition. Of all the reasons parents have for becoming discouraged with the dental care of their children, I believe the aftermath of such procedures are the most frequent offenders; i.e. pain, infection, fillings falling out, etc. There are several sound procedures that have been tried and proven to provide means of treating such cases; and if these are not possible, removal of the tooth is in order.

NON-VITAL INFECTED PRIMARY TEETH

This brings us to another point which is a rather sore point. That is the retention of non-vital infected primary teeth on the supposition that they are

necessary for the maintenance of space for proper development. Today, there is no excuse for the retention of an infected primary tooth in the mouth of a child. Besides the relationship of this infection to the general health of the patient, there are other conditions that make this idea pure fallacy.

In the first place, the crowns of the primary teeth maintain the space. If the crown is destroyed by caries, loss of space results. Secondly, as a result of the infection, alveolar bone is destroyed in the region of the roots of the primary tooth, which results in the premature eruption of the succedaneous tooth. This frequently results in a malposition of this tooth in relation to the approximating and opposing teeth. Some cases have been observed where the premature eruption has resulted in the loss of the tooth because of inadequate root structure. In the third place, the infection involving the primary tooth may result in a deformity or surface destruction of the succedaneous tooth. Fourthly, there are sufficient appliances described today to meet the needs of most any premature loss of a primary tooth. And last but not least, the possibility that such an infected primary tooth may flare up into an acute alveolar abscess cannot be overlooked.

Taking all of these factors into consideration, I think you'll agree with me when I say again that there is no excuse for the retention of infected primary teeth of a child.

SPACE RETAINERS

Appliances for space retention were mentioned as a means for the management of cases involving prematurely lost primary teeth. When indicated these are a necessary part of the dental service rendered to children. It is not enough to advise the parent after removing a primary tooth several years early that a space maintainer ought to be placed. The individual responsible for the care of that mouth should make it his business to see that proper development will con-

tinue. If an appliance is indicated, place it; but don't offer it as a luxury service after the parent has been led to believe that the service to the patient is completed.

RECALL SYSTEM

Even after all of this, there is another obligation we have to parents in order to provide the best of dental health for their children. That is that we must continually follow that patient through succeeding months and years to maintain the health that has been established. It is unfortunate that people are so busy these days that they can't keep track of their time. And yet, all of the good accomplished for a child patient, in spite of the high quality of dental treatment provided, can be lost by the failure of the patient to be returned to the dentist for regular prophylaxis and bite wing x-ray examinations. A good, sound recall system is essential in order that a dentist may expect the longest service from his restorative techniques. Four, six, and eight month recalls, depending on the individual case, can become an office routine, rather than a luxury service.

Another phase of dental service to children is that related to other factors that may disturb the developing occlusion. Such conditions as supernumerary teeth, missing teeth, prolonged retention of primary teeth, maleruption of one or more teeth, abnormal pressure habits, finger habits, and developmental anomalies must be recognized in order that they may be dealt with at the appropriate time. Simple orthodontic procedures at a proper time can save a lot of grief later on.

SUMMARY

In summary of this part of the dentist's responsibility to the child patient, as sketchy as it has been, we should realize that this health service has come a long way since 1923 when a popular textbook on operative dentistry had this statement: "The mate-

rials for filling deciduous teeth are limited to those of easy insertion and not too exacting in their requirements. The problem is greatly complicated where two cavities face each other, and in some instances the surest method of making the teeth serviceable for mastication is to bridge across the interproximal space from cavity to cavity with gutta-percha. One may place a metal guard of gold, platinum, or German silver across the interproximal space allowing the ends to rest on the gingival walls of the cavity and building gutta-percha over it."¹⁰

Those techniques described so far fulfil the requirements of preventive dentistry as set down by Dr. Robert E. Blackwell in 1944 when he defined it as, "conservative dentistry and to be effective should include diet and nutrition, mouth hygiene, so-called prophylaxis, operative dentistry, and the education of the patient, all coordinated into a well-planned program based on a periodic recall system."¹⁰

However, Dr. George Teuscher in 1949 stated, "Since Dr. Blackwell wrote his definition of prevention, much research has been done to make possible the actual prevention of the initial lesion of caries."²¹ This would extend the meaning of the word prevention to include those techniques specifically designed to prevent the disease itself rather than the consequences of it, and would be more in keeping with our objective.

Therefore we will also have to include those techniques which have been advised for this dental service to children. This is where the other phases of dental responsibility occur, since the most effective caries prevention depends upon parent and patient education and public health education.

There is no doubt today as to the relationship of sugars to dental caries. The caries mechanism has been described theoretically, demonstrated *in vivo* and *in vitro*. The overwhelming evidence substantiating the sugar-bacteria-acid mechanism of dental caries can not be denied. We should not

hesitate, therefore, in the judicious use of caries susceptibility tests, the proper advice concerning diet and eating habits, the proper instruction of oral hygiene techniques, the most advantageous use of sodium fluoride topically or in the public water supply, and the application of therapeutic dentifrices where and when indicated. If these become a part of office procedure, are included in school health programs, are taught to parents and teachers, and are all coordinated into a well-organized health program for children, the dental profession might then be able to keep up with the incidence of dental disease and eventually be able to meet the dental needs of children during the allotted 20 per cent of the dental practice time in the United States.

Our responsibility to the child patient does not need to be a discouraging one in the face of present conditions in the children of this country. If we can start with the youngest ones and provide the best possible dental service for them, in a few years our practices should include a majority of children with a minimum of annual dental needs. In this way we can assume the responsibility for the solution to what has been recognized as a major health problem of American children.

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Secondary Discolouration of Non-Vital Teeth*

by R. F. HARVEY,** D.D.S., Montreal, Quebec

THE endodontist has been much concerned with disappointing discolouration which frequently follows supposedly successful bleaching of non-vital teeth. Much has been said regarding the importance of endogenous and exogenous staining material, but little regarding this secondary discolouration.

Pearson (J. of C.D.A., Vol. 17, No. 4, April, 1951) referred to the enamel lamellae as possibly being the main source of entrance of this discolouration, and the results obtained to date with the use of radioactive material has opened vast possibilities. The purpose of this paper is to describe known physiological and pathological changes which occur in vital and non-vital teeth which may explain and play an important role in this problem.

HISTOLOGY

Enamel lamellae have been described as leaflike structures which pass through the enamel and develop in planes of tension in the maturing enamel. If this disturbance is slight, rods and interrod substance in these planes do not fully calcify. If the disturbances are severe, cracks occur in the planes of tension in the enamel of the unerupted tooth. These lamellae may either be composed of poorly calcified rods and interrod substance, or they may be filled with different tissue elements such as cementum before the

tooth erupts; the latter type may in some cases penetrate into the dentin.

The dentin is composed of 70% inorganic material and 30% organic (chiefly collagen), and water. The matrix, forming the main substance of the dentin is a calcified fibrillar material and for all practical purposes at the present time may be considered as not "alive." It is composed of fine collagenous fibrils running parallel to the outer surface of the tooth bound together by a homogeneous calcified cementing substance. The Tomes' Processes are the protoplasmic extensions of the odontoblasts in the pulp which extend through the entire original thickness of the dentin; they are enclosed in the dentinal tubules. They are not of uniform thickness, being 3 to 4 microns in width at the pulpal cavity, and tapering to about one micron or less at the outer surface. These processes together with a dental fluid or lymph completely fill the dentinal tubules.

Secondary dentin is an addition of dentin on the pulpal side of the original dentin laid down by the odontoblasts in response to various stimuli.

Transparent or Sclerotic Dentin is dentin hypercalcified; calcium salts are deposited in or around degenerating odontoblastic processes which may completely occlude the dentinal tubules.

Dead Tracts are groups of dentinal

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tubules in which the Tomes' or odontoblastic processes have degenerated.

Eburnoid "is a calcified collagenous material, apparently identical with the matrix of bone or dentin, which is deposited round degenerating and disintegrating odontoblasts when the degeneration takes place in a normal tissue fluid environment. Eburnoid may be a featureless homogeneous mass or may contain necrotic cell debris lying in irregular lacunae." (Fish)

PHYSIOLOGY — PATHOLOGY

Degeneration of Connective Tissue Cells.—Degeneration of epithelial cells results in shrinkage with the final result being a dead protective scale. In a similar manner degeneration of connective tissue cells such as the odontoblast leaves behind it an irregular deposit of matrix which may still enshrine the remnants of the cell itself. This matrix also forms a protective covering for the underlying pulp from external contamination.

Primary Degeneration of Odontoblasts.—One of the most useful methods of studying the behaviour of the odontoblast is in teeth of persistent growth such as is found in the guinea pig. Here the tooth replaces itself completely in forty days, so that it is possible to observe in one section the formation of the odontoblast, its maturity, death and disintegration.

The tooth being more or less cone shaped, when the odontoblasts have completed their dentin formation, they break up and die. As they are dying, a deposit of calcified collagenous matrix is precipitated on the pulp surface of the dentin among the disintegrating odontoblasts without the apparent innervation of any other healthy cell. It is physically and chemically the same as the dentin matrix but without tubules—only debris of the dead odontoblasts which have become incorporated in it. This calcified mass has been given the name of "Eburnoid" by Fish. When this part

of the tooth finally erupts it forms part of the biting surface of the tooth; if this does not form, then the tooth erupts as a hollow cone. In certain dietary deficiencies, this eburnoid will not form and a hollow-coned tooth results illustrating that a physiologically normal environment is required for its formation. If, for example, the animal is completely deprived of vitamin C, this condition actually occurs; when the vitamin is reintroduced into the diet, normalcy returns and eburnoid is once again formed.

Secondary Degeneration of Odontoblasts.—In the human, secondary degeneration of odontoblasts may occur under the influence of attrition, caries, erosion or any operative lesion of the dentin. Any of these may cause the death of the odontoblasts underlying the immediate area and if the pulp is not further damaged, eburnoid is formed to protect the underlying pulp tissue.

Post Mortem Degeneration of Odontoblasts.—If the odontoblasts are killed outright such as by severance of the apical vessels, then autolysis or self-solution occurs with the final products being washed away; here no eburnoid forms as the environment is not physiologically normal.

Degeneration of Fibroblasts.—This is a condition where the fibroblasts degenerate and are replaced by fine connective fibres; it sometimes occurs when a tooth sustains a blow with the severance of some of the blood vessels; total fibrous degeneration occurs and the tooth may remain in the mouth.

With a basic understanding of some of the foregoing, we can apply this to the problems of caries, attrition, abrasion and erosion. The type of reaction produced by the tooth depends of course on the degree of the irritant and the resistance of the individual tooth.

1. Prior to the penetration of the enamel by the caries bacteria, their

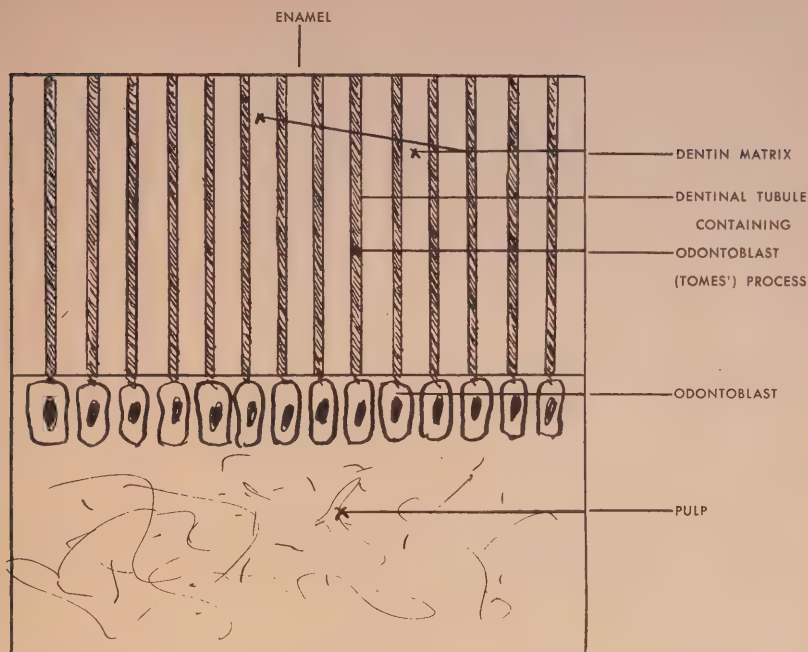


FIG. 1

Diagrammatic illustration of section of dentin showing dentinal tubules running through the matrix. The tubules are completely filled by the odontoblast (Tomes') processes. Dead Tracts occur with death of odontoblasts and the resultant shrinkage and disintegration of their processes leave empty tubules.

toxins have preceded them to result in sclerosing of the dentin immediately adjacent. This transparent or hypercalcified zone prevents the bacteria themselves from irritating the odontoblasts when they reach the dentin and so no pain is felt from the cavity. The odontoblasts due to the stimulus of its fibres being sclerosed, lay down new dentin—not really secondary dentin for its fibres are directly continuous with the original dentin.

2. Frequently in the cervical portion of the tooth when dentin is exposed suddenly by recession or removal of the cementum, there is no time for transparent or sclerosed dentin to form and the odontoblast will be destroyed and its fibril cast off resulting in a dead tract. Eburnoid will usual-

ly now be formed as a protection to the pulp and as a further protection, secondary dentin is formed by new odontoblasts.

3. Again, the transparent zone may break down resulting in a new layer being formed with the first sequence occurring, or the odontoblasts die and we have the formation of dead tracts, eburnoid and secondary dentin as described above.

4. Occasionally, heat from drilling will destroy the odontoblasts and surrounding tissues; if the inflammation subsides, callous formation results.

5. Complete death may take place.

It might be wise to add that under true cervical caries—that which occurs through cementum which may have originally completely protected the

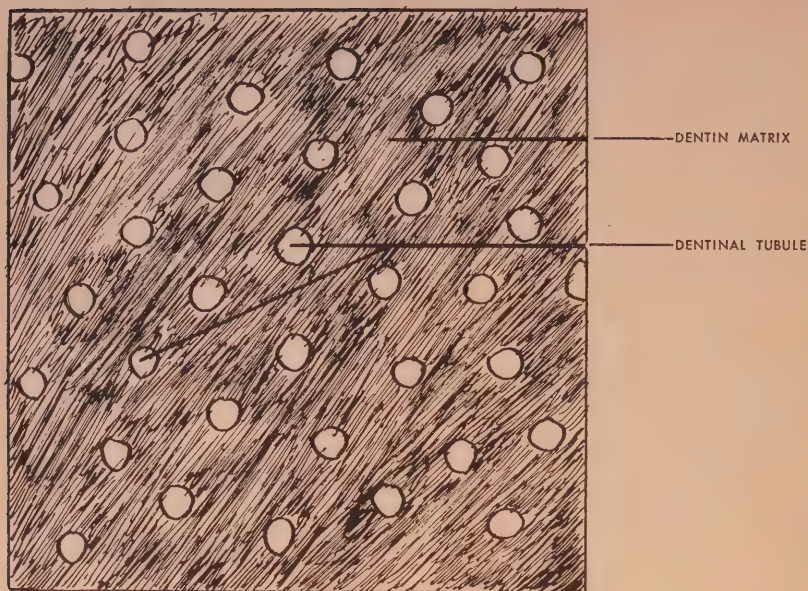


FIG. 2

Diagrammatic illustration of cross section of dentin. Dentinal tubules running through matrix are completely filled by the odontoblastic (Tomes') processes. With death of odontoblasts, their processes shrink and disintegrate leaving empty tubules.

underlying dentin — sclerosed zones also occur, but they soon break down resulting in a dead tract. Dead tracts most commonly occur in such areas, under interproximal caries, labial and lingual caries and under occlusal caries just before the pulp is exposed.

Experiments with dyes confirm the fact that this eburnoid deposit is more resistant to penetration than sound dentin due to the absence of tubules. (Fish) Dyes placed on the outside of teeth will also much more readily penetrate dead tracts than they will sound dentin and will be arrested from further penetration when they reach the eburnoid barrier.

Although dyes are formed of large molecules, they give an indication of what might be expected from other materials with relation to penetration of tooth substances. Radioactive

materials can pass through tooth structure; here again, many specimens show the more ready diffusion through areas where dead tracts are encountered and the slight arresting which occurs at the eburnoid barriers. (e.g., W. W. Wainwright, J. of Period., April 1952, page 96, Fig. C.)

It can now be seen why it is possible for stains to penetrate tooth structure. When a non-vital tooth exists, the whole dentin is one mass of dead tracts, except where sclerosis has occurred—a mass of open, empty tubules which can readily be penetrated by various materials; enamel lamellae lead to the dead tracts beneath; the whole tooth is brittle due to lack of dental lymph or fluid and the enamel cracks easily; cervical cementum removed or absent exposes the empty tubules; the once compara-

tively sound protection of enamel is no more. (Fig. 1, Fig. 2).

CONCLUSIONS

Degeneration of the odontoblastic process occurs in all non-vital teeth; modern endodontic therapy results in the complete elimination of the dental fluid or lymph; the whole dentin is now filled with dead tracts; the tooth being dry and brittle, cracks easily. These cracks, together with existing lamellae and exposed root dentin leave openings to the mass of dead tracts for easy penetration of staining materials from the mouth. The prevention of such staining would probably require something which would completely fill in and seal the exposed

dental tubules, lamellae and other cracks, as well as sealing the latter as they occur.

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World Dental Congress

by MAUDE SPENCE, D.D.S., Los Angeles, California

AT THE World Dental Congress in London, England in July, were delegates from 48 countries. The big conference was held in the Royal Festival Hall. It is a new glass walled building surrounded by flower gardens and affords a panoramic view of part of London, London Bridge, Waterloo Station, Scotland Yard, and the endless parade of busy barges and boats along the Thames can be seen from almost any spot in the building.

Its flag pole was presented to the people of London by the Government of British Columbia in 1951. Hewn from a 750-year old Douglas Fir it is 108 feet high. A flag raising ceremony opened the procedure.

"This Congress is a dream of four years come true" said Dr. G. H. Leatherman, Hon. Sec. of the Congress. To produce such a beautifully organized and smoothly running 8-day session certainly the dream was reinforced by good planning and hard work by many people.

Doing an excellent job as head of the Publicity and Program committee

was Dr. C. de Vere Green. He and his wife both attended the Dental College in Toronto. As editor of the "Congress Courier" he contributed much to the peace of mind of the visitors by outlining the coming happenings each day.

From Canada there were about ten dentists. It was a nice feeling to meet friends from Canada. Presiding over the Canadian section of the Dental Health exhibit, which attracted much favourable attention, were Dr. Don Gullett and Dr. R. G. Ellis. In a London newspaper was a picture with the caption, Dental Brain Trust. In the group was Dr. H. J. Merkeley of Winnipeg, a past president of the Canadian Dental Association. On the program were Dr. R. J. Godfrey, Dr. E. A. Grant, and Dr. S. A. MacGregor. One day in the lecture auditorium when the lights were flashed on who should be sitting next to me but a friend of college days, Dr. Helen Manchester of Toronto.

At a special meeting the British Dental Association presented an Hon-

orary membership. The distinguished recipient was Dr. Harry Garvin. The President commended the contribution made to dentistry by Dr. Garvin in his work as editor of the Canadian Dental Journal.

The scientific program covering all phases of dentistry; research, table clinics, films, television, and panel discussions was presented by dentists of many countries. The lecture auditorium was equipped with ear-phones and simultaneous interpretation translated business procedures and lectures into five languages. Surgery at the dental schools and hospitals was well attended. There were about 50 trade exhibits.

Under the leadership of Mrs. Green assisted by Mrs. Seymour Robinson, there were delightful affairs for the ladies; a style show, garden parties, coffee parties, shopping and sightseeing, and a trip through Westminster

Abbey being readied for the coronation of Queen Elizabeth II.

Dinner dances and formal receptions at the Royal Albert Hall, Savoy and Grosvenor hotels, and the Royal Festival Hall were enjoyed by the delegates and their ladies.

The Canadian Dental Assoc. can be proud of its contribution to both the scientific and lecture program, and also of the share of glamour and charm contributed by their ladies.

At a general assembly the F.D.I. (Federation Dentaire Internationale), elected to the Presidency Dr. E. W. Fish, London. It was voted to hold the next Congress in Rome.

Such a superb meeting of dentists of all nationalities accomplishes much. In his message to the Congress Mr. Winston Churchill expressed it this way: "The personal contacts which are made in the course of scientific deliberation are of much value in the field of international understanding."

University of Toronto Alumni Association

by JESSE C. FULLERTON, D.D.S., Toronto, Ontario

WHILE every graduate of the Faculty of Dentistry of the University of Toronto is, no doubt, familiar with the Dental Alumni Association, he may not be entirely familiar with the organization of the University of Toronto Alumni Association, as a whole, and may be somewhat confused when the terms U.T.A.A., Dental Alumni, Constituent bodies, and Branches are mentioned.

The following is an attempt to clarify this situation and to give some information as to the objectives, functions, and accomplishments of the various bodies.

Since the University was started, the various Faculties and Colleges had their own Alumni organizations. These grew with the years and some associations had hundreds of members.

In the early 20's, these organizations

had grown so large that it was believed desirable to federate them so as to enable economies and efficient operation to be made in the matter of records, billing, a University Alumni publication for all associations (U. of T. Monthly), etc., so in April, 1921, The University of Toronto Alumni Federation was formed.

At the close of the last war, the University was confronted with an influx of students from the services which reached a maximum of over 17,000 in one year. Its facilities were taxed to the utmost and many special arrangements had to be made to care for the tremendous student registration.

Studies indicated that many new buildings, residences, and so forth, would be required. The Board of Governors believed they needed the help of graduates all over the country in

espousing the cause of their Alma Mater. In November, 1947, representatives from coast to coast in Canada, from Newfoundland, and the U.S.A., met in Toronto to hear the Chancellor and the President discuss the situation.

Out of this grew a new conception of the part the Alumni might play in helping their University. It was decided that there should be a new philosophy, new objectives, and a new name, which was to be the University of Toronto Alumni Association.

The objectives of the new association were, in general:

(i) To supply constant information re graduate activity to the Alumni Office at 45 St. George Street,

(ii) To convey correct and up-to-date information about the University to the alumni and, through them, to the general public,

(iii) To actively promote Scholarship programs,

(iv) To establish and maintain close liaison with Secondary School teachers and pupils, with the object of furnishing information about University courses,

(v) To assist recent graduates and others to become known and to become members of the local Alumni group,

(vi) To co-operate with the University Placement Office,

(vii) To assist in seeking capital funds from corporate and non-graduate donors for general University purposes,

(viii) To co-operate with the Bequest Committee,

(ix) To assist in the promotion of an Annual Giving Fund to the University or its Faculties or Colleges among the alumni,

(x) To carry out such social activities as will assist in promoting the objectives of the Association.

At the Annual Meeting in November, 1948, the new program got under way. One of the changes was that the "University of Toronto Monthly" became the "University of Toronto Alumni Bulletin." The "Varsity Graduate," a special publication financed by the Board of Governors, and directed to-

ward the general public particularly, ceased being published in June, 1950. The larger "Alumni Bulletin" has taken over the area covered by the "Varsity Graduate."

The Board of Governors have supported the new Alumni philosophy by an annual grant towards expenses until the whole effort is self-supporting.

ORGANIZATION

Under the new organization, there are basically three areas:

(i) Constituent Associations

(ii) Branch Associations

(iii) The Alumni Office
(45 St. George Street, Toronto)

(i) Constituent Associations

Such an association is formed of the alumni of the various Faculties and Colleges situated in and around Toronto. There are a number of such Associations, e.g. — University College Alumni, University College Alumnae, Victoria College Alumni, Victoria College Alumnae, Engineering, Medical, Dental, Architectural, Forestry, Pharmacy Alumni, and many others.

Each of these Associations has its own organization of President, Secretary, Treasurer, etc. Certain officers of your Association are also members of the Board of Directors of the University of Toronto Alumni Association.

The University of Toronto Alumni Association, usually called the U.T.A.A., operates as a clearing house for periodicals, billing of memberships, financial returns, etc. Usually the Associations have an agreement with the U.T.A.A., covering financial and other matters. The Associations in and around Toronto are called Constituents. Together they form the U.T.A.A.

Each covers an important area of work. The Constituents are primarily interested in the alumni of their own Faculty or College. The U.T.A.A. is interested in the alumni in general. Working together, they complement each other.

When an alumnus is billed for membership, payment of the membership fee automatically gives membership in

both the Constituent Association and the U.T.A.A., and, when applicable, in the Charter Branch Association as well. Each shares in the fee as outlined in the agreement. Ordinarily, two-thirds of the fee goes to the U.T.A.A. for office services and publications, and one-third to the Constituent for its operation. Where a Charter Branch is concerned, the fee is divided 2: 1: 1.

(ii) Alumni Branches

Branches of the Association are classified in two groups, Charter Branches and Non-Charter Branches. Charter Branches are entitled to direct representation on the Board of Directors of the Association, and they receive an automatic share of the fee of each member of the Association residing in the Branch area. Non-Charter Branches are not represented on the Board of Directors, and they receive a share of the membership fee only when the member specifically indicates his wish to belong to the Branch.

The Charter Branches are: — Australia, Calgary, California, Edmonton, Kent County, Lakehead, London and Middlesex, Montreal Alumni, Montreal Alumnae, New York, Niagara Frontier, Ottawa Valley, Owen Sound, Regina, and the United Kingdom.

The Non-Charter Branches are:— Hamilton, Kitchener, Lindsay, Moose Jaw, Peterborough, Porcupine, Saskatoon, Vancouver, Victoria, Winnipeg.

Each Branch has its own organization. Branch members' fees are normally \$4.00 per year, (\$2.00 to the U.T.A.A., \$1.00 for Branch purposes, and \$1.00 to the Constituent of which the alumnus is also a member). The latter \$1.00 enables the Constituent to serve the member of the Branch area from his Constituent point of view.

(iii) The Alumni Office

Located at 45 St. George Street, Toronto, the Alumni Office is usually known as "45 St. George Street." The U.T.A.A. has been fortunate in having an excellent staff who cover the following areas of work:—

- A Membership and billing
- B Financial and accounting
- C General service
- D Publications

Any member seeking further information regarding Alumni matters will receive every courtesy from Col. Grier, Mrs. Macfarlane, Mrs. Campbell, or Miss Lewis.

THE DENTAL ALUMNI ASSOCIATION

The Dental Alumni is a Constituent of the U.T.A.A. From a membership of fewer than 50 in 1945, it has grown, under the leadership of Dr. Bothwell, Dr. Grant, Dr. Langmaid, Dr. Breslin, and Dr. Fullerton, into an organization of over 800 members in 1953.

Aims of the Dental Alumni Association, as outlined in the minutes of the Annual Meeting held in November, 1946, are:—

- (i) To stimulate and maintain interest in the University of Toronto,
- (ii) To develop and promote interest in the Faculty of Dentistry,
- (iii) To guide and aid in the direction of Dental education at the Faculty,
- (iv) To nominate members as teachers of Dentistry,
- (v) To observe, advise, and suggest, if necessary, the administration of the Faculty of Dentistry, should the occasion warrant.

As the Association has progressed, there have been other objectives undertaken, i.e.—

- A To assist students in choosing a vocation by a Dental Vocational Guidance program,
- B To assist and advise students in the final year in Dentistry regarding equipment and office management,
- C To assist students by raising Scholarship Funds.

HOW THE UNIVERSITY OF TORONTO ALUMNI ASSOCIATION ASSISTS IN GUIDING THE AFFAIRS OF THE UNIVERSITY

The Board of Governors of the Uni-

versity and University College is continued as a body corporate by the name and style of "The Governors of the University of Toronto". The Board consists of the Chancellor and the President of the University and twenty-two persons appointed by the Lieutenant-Governor in Council.

The University of Toronto Alumni may nominate eight of the twenty-two persons so to be appointed by the Lieutenant-Governor in Council, and such nominations shall be by general vote of the members of the U.T.A.A. who are graduates of the University. (University Act. 1947)

The appointed members of the Board shall hold office for six years and until their successors are appointed.

The Board has the power to appoint the President of the University, Principal of U.C., Deans of all Faculties, Comptroller, Librarian, Bursar, Registrar, etc., and take charge of all financial matters in connection with the running of the University.

The Senate—The Senate of the University of Toronto is composed as follows: The Chancellor, the President, the Chairman of the Board, the Dean of each faculty, the *President of the Alumni of the U. of T.*, and representatives of the Faculties, as follows:

Faculty of Medicine	4 members
Faculty of Engineering	6 members
<i>Faculty of Dentistry</i>	3 members
University College	7 members
Victoria College	6 members

All other faculties are proportionately represented, but the main interest for us is that Dentistry is represented by three members and the Dean.

The powers and duties of the Senate are—to provide for the granting, cancelling, suspending, or restoring of degrees, the establishment of fellowships, scholarships, bursaries, medals, etc., the appointment of examiners for and the conduct of University examinations other than those in faculties and schools of the University, and

many other duties connected with the functioning of the academic rather than the administrative or business side of the University.

There are no statistics to indicate the exact contribution, direct or indirect, of the Alumni Association to the Varsity Appeal of 1946-47. The following figures, however, show the extent of the important part which University alumni have played in the financial affairs of the University in the past thirty years:

Money raised by subscription after the first	
Great War	\$396,000
Loan Fund	11,000
Interest on the above money	246,000
Total, approximately	\$653,000
Cost of The Soldiers' Tower and Carillon	263,115

After deducting the cost of The Soldiers' Tower and Carillon, the balance of \$653,000 was invested, the proceeds to be used for scholarships and loan funds. To date, \$140,000 has been expended in scholarships. Loans totalling \$247,468 have been made and \$232,000 has been repaid. The scholarships are allotted to the various faculties on a pro rata basis. Dentistry's share is two scholarships yearly of \$200.00 each.

The University of Toronto Alumni Association, of which the Dental Alumni Association is a Constituent, is the only organization whereby the graduate body has a voice in helping to guide the affairs of our University and our Faculty. By the appointment of members to the Board of Governors and by the election of three members to the Senate, this organization can play a very prominent part in the affairs of our University. It is an organization in which every graduate should feel proud to be an active member.

The greater our membership, the louder our voice.

Preventive Pedodontia For The General Practitioner

MARJORIE JACKSON, D.D.S., Toronto, Ontario

UP TO the present, the main method of attack on all dental disease has been that of repair. This has been a losing battle because dental disease and dental deformities are occurring faster than treatment can be provided.

1. At the age of five, one half of the children of Canada have tooth decay.

2. At the age of twelve, nine out of ten have tooth decay.

3. At the age of sixteen, the average child has already lost two permanent teeth through decay.

Therefore, it is obvious that another and better approach must be made.

The general practitioner will always carry the major load in the treatment of the child patient. Therefore, he must be trained not only in the psychology of child management, but also in all the preventive measures known to date. He must realize that the problem is not a mechanical one. Dentistry does not begin at the occlusal surface and end at the gingival margin.

The aim of any dental health program must be prevention, and all prevention starts with the child.

Such a Dental Program consists of:

1. Early and regular dental care.
2. Thorough oral hygiene technique.
3. A well-balanced, nutritionally sound diet.

EARLY AND REGULAR DENTAL CARE

Examination Of The Child

All of the following factors must be investigated and recorded on your charts because without them the examination, treatment planning, and prognosis cannot be complete.

1. Medical History

- (a) Who is their physician, when they visited him last and why. This gives an insight into the fact that the parent is, or is not, already trained in the necessity for regular check-ups for the child.

- (b) Previous diseases from which

the child has suffered should be noted. These include measles, chicken-pox, etc., and such diseases as coeliac and diabetes. Controlled coeliacs and diabetics are caries immune but it is well to remember that coeliacs have an abnormal deciduous root resorption pattern and therefore must be periodically checked radiographically.

- (c) Whether the tonsils and adenoids are removed or present and if present whether normal or diseased. This information will prove of value if mouth-breathing or tongue habits are found in the child.

- (d) Allergies to house dust, pets, foods and drugs such as penicillin should be noted.

2. Habits and Why they are Important

It is essential that we detect early any abnormal habits so that they may be corrected before permanent damage results. It is also essential that we impress on parents why we are concerned. There is a normal equilibrium established in the mouth between the lips and cheeks on the outside and the tongue on the inside. Any abnormal position will therefore upset this normal balance and result in damage.

3. Diet

The carbohydrate intake, bedtime snacks and between meal snacks must be noted. In caries susceptible children, have the mother complete a diet sheet for one week and return it to you. Then have a consultation with her regarding her children's dietary habits.

4. Visual Examination

Note the following on your charts:

- (a)—Overbite and overjet relationships.

- (b)—Occlusion.

- (c)—Oral hygiene.

- (d)—Gingival tissues.

- (e)—Caries.

- (f)—Eruption line.

5. Radiographic Examination

- (a) To locate permanent teeth.
- (b) To locate abnormalities such as cysts and supernumerary teeth.
- (c) To detect ectopic eruptions.
- (d) To detect abnormal resorption patterns of deciduous roots.
- (e) To detect carious areas and the degree of caries.

PREVENTION OF MALOCCLUSION

Local Causes of Malocclusion within the realm of Correction

1. Premature loss of deciduous teeth.
2. Over-retention of deciduous teeth.
3. Extraction of permanent teeth.
4. Caries.
5. Faulty restorations.
6. Habits.
7. Ankylosed teeth.

Premature Loss of Deciduous Teeth

Why are deciduous teeth lost prematurely?

1. Poor diet and nutrition.
2. Lack of interest on the part of parents.
3. Lack of interest on the part of dentists.
4. Inability to handle the child patient.
5. Poor oral hygiene.
6. Lack of radiograms.
7. Poor operative procedures.
8. Ectopic eruption.

What happens when deciduous teeth are lost prematurely?

1. Premature loss of deciduous teeth does cause malocclusion.
2. Premature loss of the second deciduous molar is of more significance than the premature loss of the first deciduous molar.
3. The space closes more quickly immediately after the premature loss.
4. Loss of space takes place more quickly in the maxilla than in the mandible following the premature loss.
5. Premature loss of the upper deciduous anteriors does not result in malocclusion.
6. Premature loss of the lower deciduous anteriors might possibly influence the development of malocclusion.

What should be done when deciduous teeth are lost prematurely?

The answer to this question depends on:—

- which teeth are lost prematurely.
- at what age is the tooth lost.
- presence or absence of a permanent successor.

If the Second Deciduous Molar is Lost Prematurely.

Up to the age of 10½—construct a space maintainer unless the second bicuspid shows signs of immediate eruption.

After the age of 10½—construct a space maintainer where the second permanent molar is likely to erupt ahead of the second bicuspid. — No space maintainer is necessary if the reverse be true but observe until the second bicuspid erupts.

If the First Deciduous Molar is Lost Prematurely.

1. Before the permanent laterals and first permanent molar have erupted construct a space maintainer.

2. After the first permanent molar is in position but the permanent lateral is not fully erupted construct a space maintainer.

3. After the first permanent molar and lateral are both in position, a space maintainer is not usually required but observe carefully.

If the Upper Deciduous Anteriors are Lost Prematurely

No space maintainer is required but these teeth are often replaced for aesthetic reasons and also to prevent speech defects.

If the Lower Deciduous Anteriors are Lost Prematurely

Construct a space maintainer to prevent crowding and a deep overbite.

OVERRETENTION OF DECIDUOUS TEETH

A child is not considered abnormal just because a deciduous tooth is not loose at the average time of exfoliation. In many cases, however, the deciduous teeth are retained too long and results in poor alignment of the permanent teeth.

1. The most common cause of lin-

gual locking of the maxillary central or lateral incisor behind the mandibular anteriors is the prolonged retention of the deciduous predecessor.

2. The prolonged retention of infected deciduous teeth plays a large part in undermining the child's health. Badly broken down teeth can never hold the space. All teeth with putrescent pulps and infected roots must be removed and a space maintainer constructed.

3. Ankylosed Teeth,—

This is included in this section because an ankylosed tooth is usually an overretained tooth. This is a condition in which a tooth does not maintain its occlusal level with respect to the other teeth in the arch. They fail to grow to the level of the remaining teeth during the period of growth and development. They are most frequently seen in the deciduous second molars and occasionally in the permanent first molars, but may affect any tooth.

Trauma has been said to be a cause, but actually the aetiology is unknown. A deciduous tooth may be ankylosed with or without a permanent successor. Its removal is indicated and a space maintainer constructed to prevent an impacted bicuspid.

ECTOPIC ERUPTION

Ectopic eruption is a condition where, as a result of disharmony in growth and eruption, a permanent tooth may erupt in such a manner that it causes resorption of the deciduous root and possible premature loss of the deciduous tooth.

Classification of Ectopic Eruption

Ectopic Eruption of First Permanent Molars

—occurs in the maxilla and mandible and may be unilateral or bilateral.
—occurs most frequently in the maxilla.

—may or may not cause premature loss of the second deciduous molars.

—if it does cause premature loss of the second molars and a space main-

tainer is not inserted, it results in an impacted second bicuspid.

Ectopic Eruption of Permanent Lateral Incisors

—occurs in the maxilla and mandible and may be unilateral or bilateral.

—if unilateral it causes a shift in the mid-line relationship toward the side where the deciduous cuspid is lost.

—if bilateral there will not be a shift in the mid-line relationship.

—occurs most frequently in the mandible.

—does cause a premature loss of the deciduous cuspids and the permanent cuspids will erupt labially.

Treatment of Ectopic Eruption

Ectopic Eruption of the First Permanent Molars

1. If the first permanent molar is just barely caught under the contact of the second deciduous molar.

In this case you want to direct the first permanent molar distally. Place a piece of rubber dam or elastic band between the contact point of the first permanent molar and the second deciduous molar.

2. If the first permanent molar has drifted mesially to give considerable resorption of the second deciduous molar and the distal cusp of the first permanent molar is clearly seen in the mouth.

Take a wide elastic band and pull it forward and upward between the first permanent molar and the second deciduous molar. Instruct the parent as follows: — rinse thoroughly after eating.

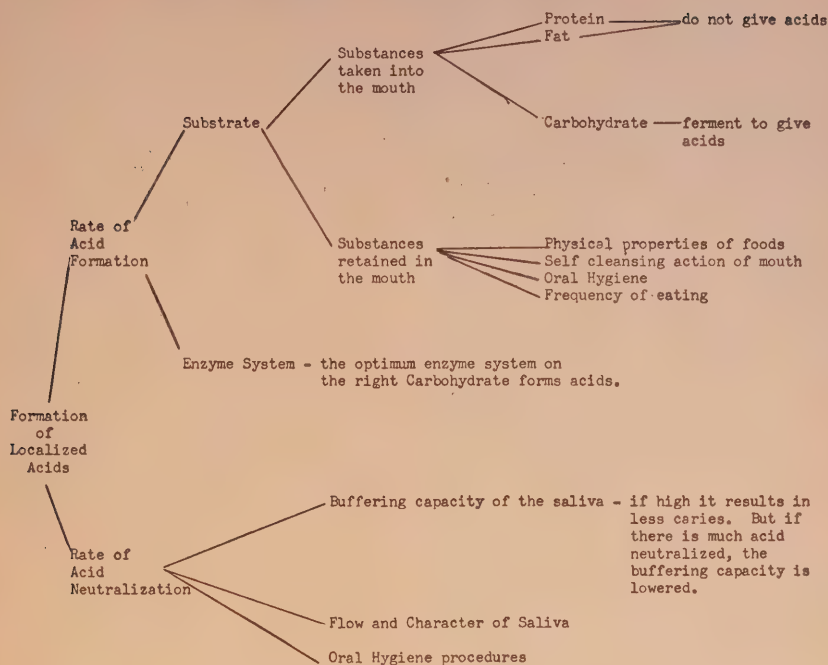
—use penicillin lozenges in the area.

—eliminate tooth brush in the area.

—return in two or three days.

Second appointment.

If the first permanent molar is not far enough back to be free of the distal surfaces of the second deciduous molar, double the width of separation and recall the patient in two days. When the first permanent molar has moved distally so that its mesial surface is distal to the distal of the

FACTORS INFLUENCING THE RATE OF CARIES FORMATION

second deciduous molar, proceed as follows:—Adapt a copper band to the second deciduous molar and cut the occlusal surface of the band until it is free of the bite. Festoon the band so that its distal part extends well up between the teeth and contacts the mesial of the first permanent molar. This gives an inclined plane to direct the first permanent molar into position.

Subsequent appointments.

Very often the first permanent molar has moved enough mesially to cause resorption of the dentine of the second deciduous molar and there is pulp involvement. Then carry out as before and when complete, extract the second deciduous molar and insert a space maintainer.

3. When considerable pulp involvement has occurred and the first permanent molar has moved to such a

degree that this treatment cannot be done, extract the second deciduous molar and by orthodontic means move the first permanent molar distally and insert a space maintainer.

From the accompanying chart which has been condensed from the work of L. S. Fosdick, you can see that there are two avenues of approach to the control of caries. If the rate of acid formation is greater than the rate of acid neutralization, the end result is caries. If the rate of acid neutralization is greater than the rate of acid formation, there will not be caries formation. It is along the approach of reducing the rate of acid formation that results are most promising today.

1. *Elimination of Substrate*

At the University of California a recent experiment was conducted. Over 1000 cases of rampant caries (10 or more per year) were studied over

a five-year period. Sweets in the form of sugars, jams, honey, syrup, candy, soft drinks, etc., were markedly restricted and refined cereal products were reduced. In 62% decay was eliminated. In 80% decay was reduced to 1 or 2 per year.

2. Oral Hygiene

Brushing after meals and after any sweet foods is producing a 50%-60% reduction.

3. Interfering with the Enzyme System

Fluorides in the water supply gives 30% reduction and the topical application a 40% reduction.

Dentistry, by giving most of its attention to filling holes in teeth, has deferred its progress, limited its usefulness and retarded the development of its ability to offer a good health service.

The real aim of dentistry is to maintain the highest physiological condition of the mouth. That is, a mouth with well formed jaws, with sound teeth in good occlusion, and with all the forces applied to them equalized and distributed so that the periodontal tissues are not overburdened.

Prevention rather than repair is the motto.

Early and regular dental care, thorough oral hygiene and sound nutrition

with sweets at a minimum form the basic pattern for a Preventive Dental Program.

Thorough oral hygiene alone will not give the desired results, nor will early and regular dental care alone, nor will a basic diet alone. All three must be used together as a basic definite program. By starting early in a child's life, and by this systematic approach, dental disease and dental deformities can be prevented.

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Our choice today lies between security and freedom. We have discovered that both are almost incapable of full realization. Which shall we choose? Which should come first and which should follow and why? Answers to these questions will reveal our political, social and economic philosophy. The answer may well spell the difference, sometime in the near future, between our well-known American way of life and the paternalistic way of life that has now engulfed Europe and a good portion of the rest of the world. Today we are confronted with the task of making a choice. We face a real crisis in the political future of this country.—Clement S. Mibanovich, Ph.D. in Jour. Am. College of Dentists.

"The priceless ingredient of every product is the honour and integrity of its maker."
—Rubicam.

None are so rich they can get along without a smile and none so poor that are not richer for its benefits.—Chinese Proverb.

The Forum

ONE IN A MILLION

Condensed from the Health Bulletin of the Dept. of Public Health, City of Toronto

Dental caries is truly a universal disease. It occurs in every community of any size throughout the world. Tooth decay, or dental caries as it is called, begins in many children within a short time, perhaps a few months or a year or two after the teeth erupt. Over half the children at age five in Toronto have had nine of the twenty teeth damaged, in some degree, by caries. The damage to, and destruction of the foundation teeth is serious enough but caries is not confined to these teeth alone. Caries often begins to affect the permanent teeth as soon as they appear and it continues to cause more damage as age increases throughout childhood, and, at a lesser rate, in adult life.

The cost in impaired health caused by dental decay cannot be measured but we know that it is tremendous. The cost in dollars, to repair the damage of decay is also tremendous.

It is estimated that there are in Toronto 135,000 children aged four to 20 years. The dental examinations done annually in our schools show that 58% of the children of these ages have carious teeth requiring treatment. One can state that the children in Toronto, aged four to 20 years, have about 250,000 carious teeth. It would require sixty-five dentists working full time forty hours a week throughout the year to provide the treatment required right now for this section of the population of Toronto.

Since tooth decay is so prevalent, its results so severe, and the cost of repair so great, it is obvious that anything we can do towards prevention

should be done. We cannot afford to neglect any measure which might help to control this disease. Some simple measures are known which will help greatly to reduce tooth decay. Briefly stated these measures are:

1. Reduction in the amount of carbohydrates, especially sugars, in our food, and less frequent nibbling between meals.

2. Brushing the teeth and rinsing the mouth immediately after eating.

3. Adding fluorine to the water supply in the amount of one part to a million parts of water.

Extensive research work between 1930 and 1942, particularly in the U.S.A., but also in England, by many investigators, clearly established the fact that fluorine in the water consumed in early childhood was responsible for a marked resistance of the teeth to decay.

Since 1945 several hundred communities have adjusted the fluorine in the water supply to the level of approximately one part per million and the only result has been a decrease in the disease dental caries.

It is reasonable to state that the adult of today cannot expect any benefit to himself from a fluoridation program, but the adult of the future will have obtained and likely will retain a remarkable resistance to tooth decay.

It seems likely that soon no community will be able to boast of a good water supply unless it contains fluorine in the amount which promises to prevent up to two-thirds of the dental caries which now occurs.

Under the circumstances, it is not a

question of whether or not we can afford fluoridation of the water supply, but rather whether or not we can de-

lay any longer in starting a public health measure which has been so fully demonstrated as worthwhile.

AMMONIATED DENTIFRICES AND CARIES CONTROL

by G. N. DAVIES, B.D.S.

Summary of paper in N.Y. State D. Jour., Jan. 1953

From this review it is apparent that while high-urea dentifrices would appear to be more promising than low-urea dentifrices, final proof of the efficacy of high-urea dentifrices in reducing caries has not yet been established.

The results of the work carried out so far would certainly justify further large-scale clinical trials but the statements of certain proprietary vested interests that "High Urea Ammoniated Dentifrice Reduced Caries" is premature, to say the least. On the basis of current evidence, experimental results do not justify such extravagant claims. The results of Henschel and Lieber's

work, while encouraging, do not prove that ipso facto high-urea dentifrices will reduce caries in the general population.

The statement that the clinical trials to date "round out a picture of incontrovertible evidence on the superior efficacy of (a high-urea dentifrice) in reducing the incidence of caries" is grossly misleading. Much sound experimental work has been carried out but statements such as this tend to bring the science of dentistry into disrepute and to undermine the confidence of the public in the findings of dental research.

THE USE OF ANTIBIOTICS IN ORAL SURGERY AND OTHER ORAL CONDITIONS

by RUSSELL A. SAND, D.D.S., F.A.C.D., Fargo, North Dakota

Summary of paper in North-West Dentistry, Jan. 1953

There are several important considerations in the use of antibiotic therapy in oral conditions we should remember:

1. Never use an antibiotic where there is no sound indication for its use.

2. When an antibiotic is used, always use it in sufficient dosage to quickly establish a high blood level and maintain that level until the infectious process is controlled or prophylaxis accomplished. Do not depend on the puny doses contained in lozenges, troches, pellets or other local media when the patient really needs antibiotic therapy.

3. Always consult with the patient's physician in any known cardiac condition, especially rheumatic hearts, when removing infected teeth or where any infectious process is to be stirred up by dental procedures.

4. Do not depend on antibiotics to take the place of time-proven methods

of treatment, particularly in the immediate elimination of acutely infected teeth.

5. The parenteral or injection method seems to be the most effective to establish and maintain adequate levels. When administered orally, in the case of penicillin, use three to five times the dosage.

6. Be sure to switch drugs when the one being used does not prove effective after adequate trial.

7. Use approximately the same dosage of antibiotics for children as adults, but not of sulpha.

8. Be informed of the symptoms and manifestations of allergies, and at the first sign refer the patient to his physician immediately.

9. We should not let blind enthusiasm for these miracle drugs cloud our concept of basic, time-proven principles of treatment.

ACUTE HERPETIC GINGIVOSTOMATITIS

by JAMES L. SCALES, D.D.S., Tuskegee, Ala.

Condensed from Jour. of Oral Surg., Jan. 1953

The advent of aureomycin has marked a milestone in the therapeutic management of herpetic gingivostomatitis. Aureomycin, in the form of lozenges, gives relief from the painful symptoms. The time of duration of the disease process is shortened but this is not as noticeable as is the disappearance of discomfort. Almost without exception, the patient is able to eat in comfort within 24 hours although lesions may still be present. Jacobs and Jacobs reported two cases of herpetic stomatitis in which one of the patients was able to eat within five hours. Usual dosage consists of dissolving one 15 mg. troche in the mouth four times daily for a period of four or five days.

Supportive therapy consists of good oral hygiene and the daily use of saline irrigations to remove epithelial debris. Sedatives are used to control the discomfort, and hypnotics to produce sleep when necessary. Cold fluids and foods seem to be better tolerated.

There are conflicting reports on the value of thiamine in the treatment of this condition. The dictates of good nutrition during infection and fever, however, warrant the administration of therapeutic daily doses of multivitamins.

Usually, as a result of high temperature and restricted fluid intake, patients show considerable dehydration. If fluid intake cannot be increased easily through the oral route, then hypodermoclysis or infusion should be started.

Penicillin is not efficacious as a therapeutic agent. The sulphonamide compounds are of no value in the treatment of herpes simplex. Marsh and Millar, in discussing the problem of viricides, write that they know of no agent at present that is selective enough to destroy virus in oral tissue infections without at the same time injuring the tissue to which it is applied.

COMBINATION OF ANTIBIOTICS AND FUNGICIDES USED IN TREATMENT OF THE INFECTED PULPLESS TOOTH

by I. B. BENDER, D.D.S., and SAMUEL SELTZER, D.D.S., Philadelphia

Condensed from paper in Jour. of A.D.A., Sept. 1952

The least effective treatment was the use of penicillin alone. This was effective in only 68 to 70 per cent of the cases.

The most effective treatment was the use of a combination of procaine penicillin G, streptomycin, chloramphenicol and sodium caprylate. This combination yielded a negative culture in 97 per cent of the cases after an average of 1.1 treatments.

The antibiotic and fungicide combination are stable for one year.

The mixture of antibiotics and fungicide was prepared as follows: 200 mg. each of streptomycin (chloride), chloramphenicol (Chloromycetin) and so-

dium caprylate were placed in a sterile mortar. These powders were well triturated for 10 to 15 minutes. To this was added a commercially available 1 cc. aqueous suspension of 300,000 units of procaine penicillin G. The entire mass was again triturated for five minutes with a sterile pestle until a homogeneous mass was obtained. The suspension was then transferred with a small sterile spatula to a discharged procaine carpule from which one of the rubber plungers had been removed. The paste was tapped or vibrated into the carpule. The rubber plunger was then replaced and the carpule was inserted into a standard procaine

syringe. A needle, such as is used in discharging hydrocolloid, was attached to the syringe. The antibiotic paste was applied in the root canal by ejecting into the canal. Reamers or files were then used to bring the material

into intimate contact with the walls of the canal. A blunt paper point was then placed in the canal and the pulp chamber was double sealed with gutta-percha and cement. The patient was dismissed for two to seven days.

MAGNETIC PROSTHESIS FOR BETTER RETENTION

by E. CISLAGHI, Milan, Italy

*Demonstrated at International Dental Congress, London, July 1952,
per International D. Jour.*

Various types of magnets, designed to be used in the construction of prosthetic appliances were shown. Magnets of every type and size fitted for every type of articulation had been expressly constructed.

Each magnet was shown free, and subsequently, fitted into a specimen prosthesis, and some constructional details of particular interest were illustrated.

The measurement of the potentiality of magnetic devices by means of three appropriate experimental scales (con-

structed by the author) was demonstrated.

These scales allow the measurement of the power of magnets, both free and included into finished prostheses.

An electro saturating apparatus (this one also specially constructed) designed to increase the charge on magnetic devices after they have been worked, was illustrated.

Models of various types of magnetic prostheses differently constructed in the Dental Clinic of Milan University were shown.

THE EFFECT OF ORTHODONTIC CEMENTS ON TOOTH ENAMEL

Condensed from Dental Record, Oct. 1952

Except when abnormally thin mixes were used, orthodontic cements did not attack the natural surface of sound tooth enamel. If the alteration in appearance of enamel occasionally reported by orthodontists is due not to the use of mixtures that are too thin, it may be due to some idiosyncrasy of the patient which has not been observed in the teeth used in this investigation.

The possibility of leakage under bands and subsequent decalcification by the usual incipient carious processes should not be overlooked. Physical breakdown, such as cracking or separation from the tooth surface, may result from repeated thermal variations or masticatory forces. Bacterial activity resulting in acid attack on the enamel or on the cement is another

factor for it appears that the presence of orthodontic appliances in patients tends to increase their lactobacillus count.

If the etching of enamel does ever occur through the action of cements it is most likely to take place during setting when the acidity is high, whereas the reported examples of enamel attack seem to apply chiefly to bands which have been left on the teeth for long periods. This also suggests the possibility of leakage or penetration through the cement, particularly if a thin mix had been used to fix the band. What is required in orthodontics is a neutral cement which is resistant to attack under oral conditions and which will strip cleanly from the enamel on removal of the band.

ANNOUNCEMENTS

● **DENTAL TREATMENT OF CANADIAN FORCES BY CIVILIAN PRACTITIONERS**—The Department of National Defence will not assume financial responsibility for dental treatment provided to personnel of the Canadian Forces by civilian practitioners:

Unless (1) Prior authority has been secured over the signature of a Command Dental Officer;

Or (2) The treatment is of an emergency nature for the relief of pain or for the repair of a broken denture.

In all cases, detailed amounts must be submitted in accordance with regulations.

● Matters relating to the **C.D.A. PENSION-ASSURANCE PLAN** should be addressed to the Administrator, Mr. E. L. R. Williamson, Post Office Box 70, Brockville, Ont.

● **PUBLIC HEALTH SERVICE PUBLICATION NO. 228**, "Oral Manifestations of Occupational Origin, An Annotated Bibliography," has just come off the press.

Articles reporting oral conditions associated with the occupation appear in a broad variety of publications. The purpose of this compilation is to bring together such information so that it may be more readily available to dentists and other interested persons or groups.

A number of free copies are available upon request from the Division of Occupational Health, U.S. Public Health Service, Federal Security Building, Washington 25, D.C.

● **THE FACULTY OF DENTAL SURGERY OF THE UNIVERSITY OF MONTREAL ANNOUNCES A SERIES OF SHORT POST-GRADUATE COURSES** as follows:—Oral Surgery and Anaesthesia—April 20-25, for general practitioners, covering modern techniques of oral surgery, local and general anaesthetics on patients. Endodontics—May 4, 11 and 18. This short post-graduate course covers all phases of modern canal treatments and is given on three separate days. Complete Prosthetics—April 13-18, covering all phases of prosthesis from impressions to insertion of dentures. Any applicant will be permitted to handle a case of his own. Pedodontics—April 20-23, covering "child management," care of the deciduous teeth, care of the young permanent teeth, care of the pulp in the teeth of children, broken teeth and dystrophies, space maintainers, etc. Diagnosis—April 13-18, covering Radiology and Treatment Planning. Periodontics — April 6-11, covering most common causes of periodontal diseases, their evolution, treatment and prognosis.

For information concerning these courses, enquiries should be addressed to: Dean, Faculty of Dental Surgery, University of Montreal, Postal Box 6128, Montreal 26, P.Q.

● **THE DENTAL COUNCIL OF CANADA ANNUAL EXAMINATIONS**, May 25-30, 1953. All examinations will commence at 9 a.m. May 25, Monday—Prosthodontia; May 26, Tuesday—Preventive Dentistry; May 27, Wednesday—Operative Dentistry; May 27, Thursday—Oral Medicine; May 28, Friday—Dental Surgery and Anaesthesia; May 30, Saturday—Practice Management.

The Oral Examinations will be held at College centres only, at a time convenient to the Oral Examiners.

All forms and fees for Class A should be in this office not later than May 1, 1953.

All forms and fees for Class D should be in this office not later than April 25.

A. J. Brett,
Sec.-Treas. of D.D.C.

● **10th ANNIVERSARY MEETING OF THE AMERICAN INSTITUTE OF DENTAL MEDICINE**, Palm Springs, California, October 25-29. For information apply to the Executive Secretary, 2240 Channing Way, Berkeley 4, California.

● **THE FIFTH INTERNATIONAL CONGRESS ON MENTAL HEALTH**, in Toronto, August 14-21, 1954.

The World Federation for Mental Health was created in 1948 to promote better human relations and to increase understanding among cultures, among nations and among professions.

There are 77 member societies from 38 countries and the total number of technically trained people who are members of these associations of the Federation approximates 1,000,000. Many individuals are also affiliated with the Federation as associates.

Enquiries should be sent to: The Executive Officer, Fifth International Congress on Mental Health, 111 St. George St., Toronto, Canada.

ANNOUNCEMENTS

● **ANNUAL MEETING CANADIAN DENTAL ASSOCIATION IN COOPERATION WITH THE ANNUAL FALL CLINIC OF THE MONTREAL DENTAL CLUB** under the auspices of the College of Dental Surgeons of the Province of Quebec Montreal, Quebec—October 18, 19, 20 & 21, 1953.

● **CANADIAN DENTAL NURSES' AND ASSISTANTS' ASSOCIATION SEVENTH ANNUAL MEETING** in conjunction with the **MONTREAL DENTAL NURSES' AND ASSISTANTS' ASSOCIATION NINETEENTH ANNUAL CONVENTION**, Mount Royal Hotel, Montreal, October 18-21, 1953. For information apply to Miss Lois Winters, c/o Dr. J. C. Flanagan, 1224 St. Catherine St. W., Montreal, P.Q.

● **WESTERN CANADA DENTAL SOCIETY**:—Jasper Park Lodge, Alberta, June 14-18. Theme—"Dentistry for the General Practitioner". The executive is going all out to make this a most interesting and colourful convention.

● The annual convention of the **CANADIAN SOCIETY OF DENTISTRY FOR CHILDREN** is to be held on Saturday, May 16, 1953, in Toronto at the Royal York Hotel, prior to the Ontario Dental Society Convention.

● **THE ONTARIO DENTAL ASSOCIATION** will hold its Annual Convention in the Royal York Hotel, Toronto, on May 17, 18, 19 and 20, 1953.

● **UNIVERSITY OF TORONTO DENTAL ALUMNI ASSOCIATION** Annual Meeting, Dinner and Dance, Friday, October 16, Homecoming week-end.

● **THE 75TH JUBILEE COMMITTEE OF THE SCHOOL OF DENTISTRY OF UNIVERSITY OF PENNSYLVANIA** has announced the program for the celebration of the Diamond Jubilee of the founding of the school, June 10-13.

Dr. Lester W. Burket, Dean, has pointed out to the committee the importance of the scientific sessions to take place on Thursday, 11th June and Friday, 12th June, when five nationally known speakers will present papers.

Dr. LeRoy M. Ennis reported to the committee that arrangements have been made for a series of television programs to be carried by T.V. stations during the celebration.

● **AMERICAN DENTAL SOCIETY OF EUROPE**, Annual Meeting in Bergen, Norway. August 4-7, 1953, Hon. Secretary, F. Douglas Derrick, 140 Park Lane, London, W.1.

● The **MARITIME DENTAL CONVENTION** is to be held at Keltic Lodge, Ingonish Beach, Sept. 3-5, 1953.

● **AMERICAN DENTAL ASSOCIATION CONVENTION** at Cleveland, Ohio, September 28 to October 1.

● **AMERICAN ACADEMY OF DENTAL MEDICINE ANNUAL MEETING**:— Hotel Shoreham in Washington, D.C., June 26-28. Theme "Nutrition". All members and interested dentists and physicians are cordially invited to attend. Apply National Secretary, Dr. William M. Greenhut, 124 East 84th Street, New York 28, N.Y.

● **WORLD CONFERENCE ON ENDODONTICS**, University of Pennsylvania, June 21-27. Among the leading Endodontists who will participate in the Conference are Dr. B. Nygaard Ostby of Norway, Dr. W. Stewart Ross of England, Dr. Francisco Pucci of Uruguay, Dr. George Hare of Canada, as well as a number of prominent physicians. The class will be divided into groups of 15 in the afternoon, to be presided over by a group leader.

An audio-visual program and an endodontic frum have been arranged for several evenings. Tuition fee for the conference \$100. Apply to Postgraduate Courses, School of Dentistry, University of Pennsylvania, 4001 Spruce Street, Philadelphia.



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Editorial**WATER FLUORIDATION**

In the February issue of the Harper's Magazine there appeared an article by James Rorty entitled "Go Slow on Fluoridation" which makes one wonder whether or not the editors of Harper's, had they lived in the time of John Ruskin, would have published an article setting forth Ruskin's contention that the steam engine should not be tolerated as it would eventually do away with horses. It is always thus when something new is evolved. This article is quite reminiscent of the opposition to the chlorination of water, the pasteurization of milk, the immunization against smallpox and diphtheria, etc. As the Director of Public Information of the American Dental Association has pointed out, Mr. Rorty quotes in detail only the few witnesses who testified before the Delaney Committee of the 83rd Congress and were in opposition to fluoridation and most of the "authorities" quoted in the article are men who have done little, if any, actual research in dental caries or in the systemic effects of fluorides in nutrition. It is also pointed out that each of the adverse opinions stressed by Mr. Rorty had been refuted by careful and conscientious research long before his article was written.

Mr. Rorty states that after six years of fluoridation the number of decayed missing, and filled teeth found in the 9-11 and 12-14 year-old groups was nearly twice as many in Brantford where the water is artificially fluoridated as in Stratford where it is naturally fluoridated and that this suggests that the artificial fluoridation of fluorine-free water supplies cannot be depended upon to result in the same low incidence of caries that is found in the naturally fluoridated areas. The writer apparently overlooks entirely the fact that it is agreed that the time fluoridated water is the most beneficial is when the teeth are forming and in the groups referred to many of the teeth had been formed before the artificial fluoridation took place. As Dr. H. K. Brown, Dental Consultant of the Dental Health Division of the Department of National Health and Welfare in Canada states:

"Informed consensus is that this year (1953) we will be in a position for the first time to make several comparisons between Brantford and Stratford, Ont. but only in the 6 to 8 years age groups. The older age groups are not yet fully comparable."

The overwhelming majority of research scientists in the United States has recommended that all communal water supplies contain an optimum amount of fluoride ions. The Delaney Committee reports as follows: "The major portion of scientific opinion in this country is that the addition to communal water supplies of fluoride compounds in a quantity sufficient to equal the proportion of about one part of fluorine to one million parts of water, presents no hazard to the public health. Such highly qualified and reputable organizations as the American Medical Association, the National Research Council, the American Public Health Association, the American Dental Association, and the Association of State and Territorial Health Officers have endorsed the program of fluoridating the public drinking-water supply. The United States Public Health Service has issued an unqualified endorsement of the program."

The Council on Pharmacy and Chemistry and the Council on Foods and Nutrition of the American Medical Association state that in their opinion the use of fluorides is safe and proven safe and helpful.

At the recent meeting of the American Association for the Advancement of Science, the dental section strongly endorsed water fluoridation. The Australia Dental Association has endorsed the findings of the National Health and National Research Council that the addition of fluorides to water supplies is a reasonable and safe measure to be carried out under strict supervision and scientific control. The Canadian Dental Association has officially stated that fluoridation can reasonably be expected to reduce the incidence of dental caries but that such projects should be planned and conducted so that they will provide reliable data which will supplement our present knowledge.

On February 1 last more than ten million persons in some 600 United States cities and towns were routinely drinking water to which fluoride ions were being added under controlled conditions, including such cities as San Francisco, Indianapolis, Baltimore, Detroit, Rochester, Cincinnati, Cleveland, Philadelphia, Milwaukee, Pittsburgh and Washington, D.C.

Dr. Roy Blaney who is in charge of the fluoridation in Evanston, Illinois, recently stated that after only five years of fluoridation the permanent teeth of the six-to-eight year old children in that city showed a 46 per cent caries decrease.

In the past five years the Grand Rapids children, where the water is being fluoridated, showed a 59.8 per cent fewer cavities than in the control group in Muskegon. That was enough for Muskegon to decide not to wait any longer before fluoridating its own water supply.

Recently a number of the members of the Worcester District Dental Society visited Newburg where fluoridation has been carried on for seven years and they found a very definite reduction of dental caries and there were beautiful well-formed arches as compared with the control city of Kingston where caries was rampant and out of control. They returned home anxious to adopt fluoridation at once and not wait for the completion of the ten-year test period. These dentists found that it was not an expensive procedure and was easily controlled and that there was not the slightest difference in bone development as interpreted by x-ray pictures which were sent to New York for expert interpretation. Brantford, Canada, has shown a reduction of over 40 per cent tooth decay since fluoridating the water supply.

It seems inconceivable to this writer that people should be influenced by the unscientific literature which has attributed most of the diseases to which human

flesh is heir, to fluoridation of water supplies by adding, as one writer has expressed it, one drop of fluoride to sixteen gallons of water, or a bath-tub half full of water. It has even stated that fluorine seemed to feed malignant growths and yet it has been reported recently from Texas, where fluorides are quite prevalent, that there is a lower cancer rate than in most other states.

In this journal, in October 1937, there was published a paper by O. J. Walker, M.A., Ph.D., Professor of Chemistry at the University of Alberta, on "Mottled Enamel in Alberta." In a number of areas in the province, particularly around Red Deer, Calgary and Lethbridge, the well water contained as high as four parts per million of fluorides, and in these areas there was considerable mottling, but we do not find mottling where the ratio is one part per million. One must remember also that most of these people had been drinking this water all their lives and yet no systemic results were reported; no fragile bones; no weakening of minds and health; no special liver and kidney disease; no evidence of the effect of accumulated poison; all of which has been attributed to fluoridation.

The following was stated in the Texas Health Bulletin last December: "Those who claim that the addition of fluorine to city water supplies will have a harmful accumulative effect are either ignoring or are not aware of this fact: there are cities in this state where the people all their lives have drunk water containing as high as 18 parts fluorine per million parts of water. That's 17 times the concentration advocated in controlled fluoridation programs which this department approves. But despite this tremendous fluorine concentration, we have never heard of a single case in which a person has suffered systemic effects—beyond mottled enamel—as a result of drinking the water.

"The Texas State Department of Health approves fluoridation because of the scientific soundness of the practice. It has been studied, tested, tried, and experimented with for decades. It works, and the most respected medical and dental authorities in the world approve it."

The cost is from 5 to 15 cents per person per year. It is not expensive. In Brantford the cost of fluoridation was 12.6 cents per capita in 1949.

The inclusion of fluorides in food (milk, bread, salt, etc.) is not practical because of greater variability of consumption, especially by infants, and control of chemical analysis is relatively very expensive.

Fluoridation has no effect on industrial processes. The use of home fluoridated water is not promising as this would be done by very few people.

Gerald J. Cox, Ph.D. in the Journal of the Michigan State Dental Association points out that opposition to fluoridation comes from people who may be roughly classified as follows: (1) *The Uninformed* who are interested but do not have the time or opportunity to study the evidence, which group may include even some dentists and physicians; (2) *The Misinformed* who have been misled by baseless allegations from those opposed to fluoridation; (3) *Those who have something else to sell* or promote such as the well-known advantages of reducing sugar consumption, etc., also the vendors of faddist foods; (4) *The Crackpots* who misquote statements made by normal people and lift statements from the context in order to give a false meaning. They quote each other just as do those who are proponents of fluoridation; (5) *Various combinations* of the above.

The fluoridation of water supplies has given us another milestone in the partial control of a disease of almost universal prevalence. By prompt action we can look forward to a generation of children who will reach adult life with a full complement of teeth. Water fluoridation presents a sound economic investment to the taxpayer. Fluoridation of water supplies is destined to go down in history as one of the great health measures of our time. Delaying tactics are not conducive to progress, so, as someone has said, "What are we waiting for?"

M.H.G.

BOOK REVIEWS

1952 Year Book of Dentistry, published by Year Book Publishers, 200 E. Illinois St., Chicago, Ill. Pages 519. Price \$5.75.

The Year Book of Dentistry furnishes an annual post-graduate course for the busy practitioner. Capable editors have selected the more important articles published during the past year and presented them concisely in one volume.

Some 311 articles are contained in this year's volume. The topics deal with all phases of dentistry in a most readable form with adequate illustrations. The book is divided into sections so that the selections upon any one subject can be read consecutively.

Over the years this publication has been popular with many dentists who look forward to its annual appearance. Don W. Gullett

Public Health and Dental Programs on Industry, a Folio of Abstracts and Excerpts of the First Public Health Workshop, sponsored by the First District Dental Society of the State of New York. Compiled and edited by Alfred J. Asgis, D.D.S., Ph.D., Assistant Professor of Oral Surgery and Lecturer on Public Health, Postgraduate Division, New

York University College of Dentistry.

The President of an important industrial plant is quoted as saying, "An industrial worker is concerned chiefly (as far as health and comfort are concerned) with three things—his feet, his back and his teeth." This Workshop was concerned with one of these items—the teeth and teeth as an integral part of the body. The aim of the Workshop was to focus attention of the dental and medical professions, as members of a functioning health team, on public-health and occupational-health problems. The objectives of the Workshop were: (1) To orient dentists on the present scope, functions and developments in dental public health, and their effects upon the practice of general dentistry and oral medicine. (2) To direct attention to trends on occupational health and dental public health, and their effects upon the practice of general dentistry and oral medicine. (3) To stimulate interest in problems that are facing dentists in their cooperative practices with physicians, working as members of a health team. (4) To indicate possible solutions for these community-health problems in relation to the private practice of dentistry.

M.H.G.

ROYAL CANADIAN DENTAL CORPS NEWS

Brigadier E. M. Wansbrough was guest speaker at the Sudbury District Dental Society Dinner, held on February 25, 1953.

Acting Major J. C. Brick recently promoted, was born in Windsor, Ontario, on October 5, 1920, and attended school in that city. Major Brick served with the Essex Scottish Regt. N.P.A.M. from March 1936 to May 1940. On July 8, 1940 he was appointed 2nd Lieutenant in the Essex Scottish Regt. C.A.S.F. He proceeded overseas with his regiment, and was taken prisoner on August 19, 1942, during the Dieppe landing. He returned to Canada on release from Prisoner of War Camp to attend the Faculty of Dentistry, University of Toronto, graduating in the spring of 1949. He was appointed to the R.C.D.C. on gradu-

ation in the rank of Captain. Major Brick is married with one child, and is at present the Dental Officer with No. 2 Fighter Wing, R.C.A.F. in France.

Brigadier and Mrs. E. M. Wansbrough and Colonel and Mrs. C. B. H. Climo were patrons at the R.C.A.M.C.-R.C.D.C. Fourth Annual Ball held in Montreal, February 13, 1953.

Major G. C. Evans is attending a Course in Operative Dentistry at the U.S. Naval Dental School, Bethesda, Maryland, U.S.A.

Lieut.-Col. V. H. Jekyll is at present employed at the Directorate of Dental Services, compiling the history of the Royal Canadian Dental Corps.

Lieut.-Col. G. B. Shillington attended the American Denture Society Meeting

and the Chicago Mid-Winter Dental Meeting held at Chicago, Ill., February 9-13, 1953.

Lieut.-Col. G. B. Shillington addressed

the members of the Montreal Dental Club at a Dinner Meeting held February 23, 1953, on the subject "Periodontal Aspects of Partial Denture Design."

CANADIAN DENTAL ASSOCIATION NEWS

FROM THE OFFICE OF THE SECRETARY

DENTAL STUDENTS' REGISTER 1952-1953

(as reported by Deans of the Schools)

Dental Students' Register for the academic session 1952-53 is presented in the following tables.

Whereas there were 755 undergraduate students reported for the session 1951-52 there are 719 for the current session or 36 less. The number of women undergraduate students has doubled during the year increasing from 10 to 20.

The accommodation in the schools for students remains stationary at 212 per class. All possible pressure has been brought upon the authorities concerned pointing out the necessity for increased teaching facilities. Only one course for dental hygienists, with accommodation

for ten students, has been established to date. The need for training facilities for hygienists has also been brought to the attention of the authorities.

The Province of Saskatchewan continues to obtain the greatest ratio of students to population of any province in the dental schools.

Table VIII has been added to the Students' Register this year. The figures given are relative in that the schools have difficulty in furnishing an accurate number of applicants. However trends may be observed which it is thought will prove useful in directing activities.

TABLE 1

Total Enrolment of Undergraduate Students in the Dental Schools of Canada as of January 2nd, 1953

University	Freshmen	Sophomores	Juniors	Seniors	Men	Women	Total
Dalhousie University	12	12	12	14	45	5	50
McGill University	35	35	37	34	141		141
University of Montreal	20	16	20	55	110	1	111
University of Toronto	75	82	62	75	283	11	294
University of Alberta	30	29	29	35	120	3	123
Totals	172	174	160	213	699	20	719

TABLE 2

Computed Data Respecting Relationship by Percentage and Ratio to Population per Province of Origin of Canadian Students Attending Canadian Dental Schools

Students From	Percentage of Students	*Ratio of Students to Population
Newfoundland	1.39	1/36,142
Prince Edward Island	0.97	1/14,061
Nova Scotia	4.45	1/20,081
New Brunswick	3.06	1/23,441
Quebec	22.11	1/25,507
Ontario	36.72	1/17,415
Manitoba	3.34	1/32,356
Saskatchewan	8.34	1/13,862
Alberta	8.34	1/15,658
**British Columbia	4.87	1/33,292

*Population figures used are those supplied by the Bureau of Statistics, Ottawa for the year 1951.

**Students attending dental schools in the United States are chiefly from the Province of British Columbia. These students are not included here and therefore this table does not give a true perspective in the case of this province.

Note: Approximately 35-40 Canadian students attend schools in the United States each year but as it is impossible to determine from where they originate in Canada they cannot be included in this table.

TABLE 3

Total Number of Graduates During the Years 1940-1952 Inclusive

School	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952
Dalhousie University...	12	7	8	11	6	8	0	10	9	6	11	12	12
McGill University...	13	18	9	26	12	13	5	18	15	34	36	37	36
University of Montreal...	23	14	31	18	37	30	41	36	38	45	42	69	55
University of Toronto...	56	45	40	103	61	58	56	75	24	75	168	152	85
University of Alberta.....	13	13	32	8	24	7	0	10	13	20	49	25	27
Totals.....	117	97	120	166	140	116	102	149	99	180	306	295	215

For the Year 1952

	Male	Female
Dalhousie University.....	12	0
McGill University.....	36	0
University of Montreal.....	55	0
University of Toronto.....	85	0
University of Alberta.....	26	1
Totals.....	214	1

TABLE 4

Distribution of Undergraduate Students by Provinces and Foreign Countries in the Dental Schools of Canada as of January 2nd, 1953

School	Newfoundland	P.E.I.	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	United States	British West Indies	Bermuda	Nigeria	Europe	Australia	Great Britain	Totals
Dalhousie University...	7	2	30	10												1		50
McGill University...	3	2	1	5	67	13	6	9	2	9	15	5	2		2			141
University of Montreal...			1	5	92	1		1			9				2			111
University of Toronto.....		3		2		250	13	10		12					1	1	2	294
University of Alberta.....							5	40	58	14		1		1	4			123
Totals ..	10	7	32	22	159	264	24	60	60	35	24	6	2	1	9	2	2	719

TABLE 5

Additional Students

	Dalhousie University	McGill University	University of Montreal	University of Toronto	University of Alberta	Totals
*Graduate during 1952-53...	0	0	2	12	0	14
**Post-graduate during 1952-53.....	0	0	2	5	0	7
***Occasional during 1952-53 Student Dental Hygienists	0	0	61	131	0	192
1952-53.....	0	0	0	11	0	11

*The term "graduate" means those dental graduates registered in the Graduate School of a University, proceeding to a degree.

**The term "post-graduate" means those dental graduates registered in a Dental Faculty, proceeding to a degree or diploma.

***The term "occasional" means those dental graduates registered in a Dental Faculty, for courses of long or short duration, but not proceeding to a degree or diploma.

TABLE 6
Number of Qualified Canadian Applicants for Dental Course

University	1945 Apps	1946 Apps	1947 Apps	1948 Apps	1949 Apps	1950 Apps	1951 Apps	1952 Apps
Alberta.....	26	59	27	44	50	45	37	40
Toronto.....	251	?	?	410	290	239	228	206
McGill.....	87	104	190	165	142	124	118	50
Montreal.....	157	108	137	135	140	112	72	107
Dalhousie.....	?	?	?	?	?	?	?	25

TABLE 7

Maximum Number of Undergraduate Students that will be Accepted in a class in Your School

Dalhousie University.....	12
McGill University.....	35
University of Montreal.....	60
University of Toronto.....	65
University of Alberta.....	30
Total.....	202

TABLE 8

Recapitulation of Undergraduate Enrolment in the Dental Schools of Canada 1940-1952 Inclusive

School	Dalhousie University	McGill University	University of Montreal	University of Toronto	University of Alberta	Total
1940-						
1941.....	31	58	104	210	51	454
1942.....	25	61	118	232	49	485
1943-						
1943.....	25	67	139	270	53	554
1944-						
1944.....	22	67	154	255	24	522
1945-						
1945.....	28	51	162	264	34	539
1946-						
1946.....	27	73	184	180	54	518
1947-						
1947.....	38	111	188	340	108	785
1948-						
1948.....	37	127	208	435	115	922
1949-						
1949.....	41	146	224	478	123	1012
1950-						
1950.....	48	147	225	478	136	1034
1951-						
1951.....	48	145	196	380	114	883
1952-						
1952.....	49	145	140	300	121	755
1953-						
1953.....	50	141	111	294	123	719

Someone has said that a good prescription for the preservation of vigour into the later years of life is "Equal parts of happiness, good health, good food, good cooking, good places to eat, good people to eat with, and good reasons for eating." If persons in the younger age groups could be convinced of the wisdom of this prescription, undoubtedly much more could be done to maintain a good skeleton, including the mandible and maxilla, than can ever be done in later years to nutritionally retrieve them.—*Nina Simmonds in Jour. of Prosthetic Dentistry.*

"Happiness is to be found along the way, not at the end of the road."

NEWS FROM THE PROVINCES

MANITOBA

The **Winnipeg Dental Society** had as its clinician on February 12, Dr. O. B. Coomer of Louisville, Kentucky. Dr. Coomer who is President of his State Dental Society is also President-elect of the American Academy of Restorative Dentistry and a clinician who can speak with authority and clarity on many aspects of dental practice.

The meeting was greatly enjoyed from the standpoint of the many useful ideas and theories presented, but perhaps the most important part of Dr. Coomer's message was the emphasis he placed on what good dentistry has given back in self-satisfaction and material rewards to those who practise it. Dr. Coomer was very convincing in his encouragement to all to raise standards just a little higher.

T.J.C.

ONTARIO

Staff members of the **Faculty of Dentistry**, University of Toronto gave lectures as follows during March:

Dr. J. E. Moser on March 10 before Stratford and District Dental Society at Stratford.

Dr. J. R. Fletcher on March 14 before London Dental Society at London.

Dr. J. E. Moser on March 18 before Kingston and District Dental Society at Kingston.

Dr. R. S. Woollatt on March 20 before Niagara Peninsula Dental Society at Welland.

Dr. N. R. Rockman on March 25 before Grey, Huron, Bruce Dental Society at Owen Sound.

Dr. W. G. McIntosh on March 23 before Ottawa Dental Society at Ottawa.

Dr. C. H. M. Williams on March 26 before Essex County Dental Society at Windsor.

Dr. R. E. Moyers on March 5 before Detroit Dental Club at Detroit, Michigan.

Dr. W. G. McIntosh on March 12 before the Hamilton Dental Association at Hamilton.

Dr. W. G. McIntosh on March 11 before the Academy of Dentistry, Toronto.

Dean R. G. Ellis on March 16 before Winnipeg Dental Society at Winnipeg, Manitoba.

Dean R. G. Ellis and Dr. C. H. M. Williams represented the Faculty as delegates to the Annual Meeting of the American Association of Dental Schools at Philadelphia on March 23-25.

On Saturday, February 21, 1953, over 70 members of the **London Dental So-**

ciety met in Hotel London for the regular dinner meeting. President Bruce Taylor was in charge and Guest Clinician was Dr. Charles Jamieson of Detroit, Michigan, who presented an illustrated paper on "Complete Dentures — Success or Failure."

The highlight of the meeting was a presentation to one of the Society members, Dr. R. G. Woods, of Watford, President of the Ontario Dental Association 1952-53. Dr. Woods has been a valued member of the Society for many years and in recognition of this and of his election to the post of O.D.A. President, he was presented with a gift on behalf of the Society by Dr. H. D. Taylor, classmate and life long friend of Dr. Woods.

J. A. Guest

The **Ladies' Auxiliary** to the Academy of Dentistry, Toronto, held a Bridge Sale and Tea at Simpson's Arcadian Court on February 14. Proceeds were presented to the Faculty of Dentistry for surgery and treatment of needy children with dental abnormalities.

The ladies of the Auxiliary were privileged to tour the Hospital for Sick Children on March 19. Committee in charge of arrangements were Mrs. J. E. Verth, President and Mrs. K. M. McPherson, Vice-President.

The second dinner meeting of the **Sudbury Dental Society** for 1953 was held in the Legion Memorial Hall on February 25. The guest speaker was Brigadier E. M. Wansbrough of the Royal Canadian Dental Corps. The members enjoyed his talk on the growth and development of the R.C.D.C.

In addition to the Sudbury members, dentists from New Liskeard, Cobalt and Sturgeon Falls attended the meeting.

G. P. Copeland

QUEBEC

Colonel Shillington of the R.C.D.C. was guest clinician at the February 23 meeting of the **Montreal Dental Club** held in the Queen's Hotel with Dr. M. L. Donigan presiding.

Using slides to illustrate his subject of "Periodontal Aspects of Partial Denture Design," Col. Shillington reviewed the various methods of partial denture construction and compared them as to their efficiency in protecting the underlying structures.

To preserve the underlying periodontal membrane and bone. Col. Shillington suggested that the case should first

be properly surveyed and rest positions prepared. In the construction of the appliance opposite retentive arms should be well braced by means of rigid connectors. The occlusal surface of the replacement teeth should be reduced and cusp interference eliminated.

To preserve the mucosa and gingiva the rests should be included to deflect food and prevent settling. The gingival margins should be exposed. He advocated the use of metal bases because the contacting surfaces are more highly polished, they are non-absorbent, and are good conductors.

In thanking the speaker, Dr. L. Kent recalled knowing Col. Shillington as an excellent dentist and soldier. He expressed the opinion of those present in adding that he now knew him to be an excellent clinician. G. D. Armstrong

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A meeting of the **Mount Royal Dental Society** was held Feb. 10. Clinicians were Dr. R. M. Weiner and Dr. M. Levitt.

Dr. Weiner presented a paper on "Newer Developments in Local Anaesthetics." Mention was made of the newer anaesthetics and brief indications for their use were given. Safety margins of the anaesthetics were discussed. In the course of his paper Dr. Weiner reported on procaine 2% and epinephrine, monocaïne 1½ and 2%, N.P.C., xylocaine, metacaine, and brief mention was made of metacaine and tetracaine in the practice of dentists suffering from allergy to the procaine anaesthetics.

Dr. M. Levitt presented a paper on "Acrylics in Dentistry." He outlined the most favourable method of processing the denture base, mentioned the use of the newer self-processing lining materials and outlined the uses of the heat-processing and self-processing acrylics in operative dental restoration. A lively discussion from the floor concluded the meeting. Dr. Herbert Caplan thanked the speakers.

A bi-monthly meeting of the **Mount Royal Dental Society** was held Feb. 24. The clinician for the evening was Dr. C. P. Leblond, Professor of Histology, Faculty of Medicine, McGill University. Prof. Leblond spoke on "The Development of Normal Dentin." This address was the result of several years' study of tooth development and led to a greater appreciation on the part of the audience of the vital nature of a tooth.

Dr. Leblond outlined a method of study in which radioactive calcium and phosphorus were injected and followed by the application of a photographic emulsion to the histological sections. The pulp contains calcium and phosphate ions in

the extra-cellular fluid, and it could thus be seen that the radio-isotopes passed into the dentin in a very short time. This phenomenon permits a graphic survey of the dentin at various stages of its development.

Dr. Leblond's presentation pointed to several new concepts in the approach to tooth development, and aroused great interest in his listeners. Dr. Gerald Franklin thanked Prof. Leblond for his interesting presentation. A. W. Bazerman

NEWFOUNDLAND

At the convention of the **Newfoundland Dental Association** held February 20-21, the following officers were elected:

President: Dr. F. A. Janes, Corner Brook.
1st Vice-Pres.:

Dr. G. E. Mallam, St. John's.

2nd Vice-Pres.:

Dr. Reginald Ball, Grand Falls.

Secretary: Dr. J. M. Darcy, St. John's.

BRITISH COLUMBIA

The **Fraser Valley Dental Society** selected as speaker for its March meeting, Dr. Eric Nordin, of Vancouver. The subject was "Periodontia Relative to General Practice."

This Society has had presentations on Endodontia, Oral Surgery, Orthodontia, Operative Dentistry, Preventive Dentistry, and now Periodontia, during the 1952-53 term. Meetings are held at different towns each month, for the benefit of the members in widely separated parts of the Fraser Valley.

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Information is at hand regarding the formation of another voluntary dental society—the **Upper Island Dental Society** (Vancouver Island). Organization will be completed in time for a full program of activities for the 1953-54 term, and the Society will be given all possible assistance by parent organizations.

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At the March meeting of the **Vancouver and District Dental Society** Dr. Robert E. Johnson of Seattle was the guest speaker. Dr. Johnson is a graduate of the University of Michigan, and is now Associate Professor of Oral Surgery, University of Washington.

Dr. Johnson's topic for the afternoon meeting was "The Differential Diagnosis of Oral Pathological Conditions of Surgical Interest." After dinner, he spoke again on "Exodontia and Minor Oral Surgery Techniques for the General Practitioner."

Several well attended meetings of the Executive Committee of the **British Columbia Dental Association**, since the beginning of the year, reflect the active work carried on by that organization and allied committees.

Plans for the Annual Convention are well underway, under the chairmanship of Dr. J. G. Ryan, in charge of the program.

The Public Relations Committee is actively engaged in the preparation of a program to include—

1. Newspaper advertisements.
2. Public Relations with the Association.
3. Publicity by Press and Radio.
4. Speaker Panel, to address service clubs, Parent Teacher group, etc.
5. Dentist-Patient Relations.

The cost of the program under consideration would be close to \$9,000.00 a year, and, if approved by the membership at large, might call for an annual fee, for Public Relations programs, of \$20.00 instead of the \$10.00 now levied.

Further consideration is being given to a possible enlargement of the Commercial Sickness and Accident Insurance now in effect in the Association, so as to provide coverage up to five years for accident and two years for sickness disability, in the amount of \$100.00 per week for all members under 59 years, and \$50.00 per week for members up to 64 years. Once established, the policy may be held up to the age of 70 years.

Co-operation of the College and the B.C.D.A. will be continued in an effort to have a **Dental School** established at the University of B.C.

A committee of the B.C.D.A. has been in consultation with the **Workmen's Compensation Board**, resulting in a new and improved scale of fees, approved and adopted by both organizations.

The annual report of the **Department of Health and Welfare** of the Province of British Columbia has just been received. It contains the report of the Department of Preventive Dentistry of the Province of B.C., which will be reviewed in a later news item.

ALBERTA

The **Calgary Dental Society** held its January meeting in the Sun Parlor of the Palliser Hotel. Much business was discussed at the meeting. Dr. James Zimmerman ably presented a financial report of the Alberta Dental Association.

He graphically illustrated the division of the annual license fees.

Following the business, Dr. Max Lipkind and Dr. Rex Ehrlert presented an exceptionally interesting clinic on Root Canal Therapy and Root Resection. They presented a diagnostic and complete procedure routine for root canal treatment. Following a question period, many radiograms were projected showing cases before, during, and at multiple periods following treatment. Dr. Baden Powell thanked the clinicians for their outstanding clinic so pleasantly presented.

At the February meeting of the Calgary Dental Society, Dr. H. L. Freeland was elected by the Society to be Director of Dental Services at the new Calgary General Hospital. Dr. A. D. Sparrow and Dr. Roy L. Rasmussen presented a very comprehensive report on the "Time Payment Dental Services Plan." The report is to be considered by the membership before discussion takes place. The following were elected to the executive for 1953-54.

President: Dr. R. M. Duncan.

Vice-Pres.: Dr. Roy L. Rasmussen.

Secretary: Dr. W. R. Upton.

Treasurer: Dr. A. D. Sparrow.

The Calgary Dental Society's Annual Ladies' Night was held February 13, at the Glencoe Club. Following a cocktail hour a buffet banquet was served. Dr. James Zimmerman brought best wishes to the gathering on behalf of the Alberta Dental Association. Dr. J. Smith Gardner presented the congratulations and best wishes from the Medical Society. Dr. A. D. Sparrow proposed the toast to the ladies, with Mrs. A. A. Downey responding. Dr. Brooks thanked the entertainment committee composed of Drs. Duncan, Rasmussen, Gibson and Waddell for arranging the best ladies' night in years. Following these brief speeches everyone enjoyed the dancing which lasted until 1 a.m. The feeling of the 116 present was that similar gatherings should be held at least twice a year.

L. K. B.

The **Edmonton and District Dental Society** held its annual Ladies' Night February 13. The evening took the form of a cabaret style dinner and dance in the new Macdonald Hotel. Mayor and Mrs. Hawrelak and Dr. and Mrs. Geo. Elliott of the Academy of Medicine were the guests present. Many dental students and dental assistants were also present. The evening was a complete success.

The curling league is progressing well with ten rinks participating monthly. After each game a banquet is held in the Alberta Avenue Club. Dr. J. Geddes leads

the curlers while Dr. Gerry Gerolamy has been defeated but once. On April 1st the Academy of Medicine will join the dentists in a one-day bonspiel.

The February meeting of the Society was cancelled due to the pressure of the Western Canada Dental Society Convention in Jasper in June of this year. So many committee meetings are held that it would be impossible to hold a society meeting without cancelling the committee meetings. Dr. Don McIntyre reports that approximately 300 couples have forwarded payment for advanced registration already.

The Central Alberta Dental Society held its last meeting in the Royal Cafe Banquet room. Fifteen members were present. Dr. Lorne Brooks of Calgary presented a brief on "Fluoridation of the Communal Water Supply." In presenting a summary of fluoridation statistics, Dr. Brooks also mentioned the value of fluorine as a public-relations aid to the profession. An enjoyable discussion and question period followed the lecture.

Dr. Murray Boyce conducted the business meeting. He announced plans for future meetings. Dr. Chal McNicol of Didsbury was appointed Public Relations Officer for the Central Alberta Region.

SASKATCHEWAN

Regina Dental Society:—The following officers were elected for the 1952-53 season.

President: Dr. W. K. Martin.
Vice-Pres.: Dr. J. E. MacDiarmid.
Secretary: Dr. T. F. Wihak.
Treasurer: Dr. D. M. Parker.

The Society has been very active this

year and there has been an excellent attendance at all meetings. Several dentists were in attendance from Moose Jaw, Weyburn, Swift Current and Qu'Appelle. The meetings of Dr. Ratté, Dr. Gullett and Dr. Simon, were particularly well attended and appreciated.

Dr. Chegwin was appointed to speak to the Vocational Guidance Classes at the collegiates. Dr. deWitt was appointed as a referee on the Workmen's Compensation Board. Possibly the best attended occasion was ladies' night which was held at the Assiniboine Club. Guest speaker for the February meeting was Dr. Asquith of the Associated Anaesthetists who gave a very interesting lecture on "General Anaesthesia and the Dentist."

Prince Albert Society:—At the February meeting Dr. J. J. Schachter, orthodontist, of Saskatoon was the guest clinician. His visit is one in the series of visiting clinicians as sponsored by the Saskatchewan Dental Association. The afternoon session was devoted to a demonstration and discussion on the use and construction of space maintainers. Following the dinner, Dr. Schachter presented a paper on the "Theory of Tooth Movement."

Dentists from out of the city attended, —Dr. Wagner from Nipawin, Dr. Turner from Carrot River and Dr. Robinson from Tisdale.

All present were very appreciative of the excellent clinic given by Dr. Schachter and felt that much practical knowledge was gained. Also, everyone enjoyed the entertainment provided by Dr. and Mrs. N. T. Godfrey in their home.

BRITISH COMMONWEALTH NEWS

GREAT BRITAIN

Present Position of the Congress Finances:—It is reported in the British Dental Journal that the amount in the current account of the Congress is approximately £1,100. The Congress owes £2,000 to the British Dental Association, and a further £1,250 which had been approved by the Organizing Committee as grants to the permanent secretariat, to various individuals who had rendered special service to the Congress, and £900 in suspense accounts of various officers of the Congress.

Salaries of Public Dental Officers:—The adequate staffing of the school dental service depends in no small measure on the scale of salaries attached to both

whole and part-time posts in the service, and there can be no doubt that recruitment in the past has been hampered on account of the inadequate nature of the salaries which local authorities have been prepared to pay. The profession will therefore note with interest that claims are being submitted to the Dental Whitley Council (Local Authorities) for an improvement in the scale applicable to whole-time posts and for the settlement of a national scale for part-time officers which will be more in keeping with present-day conditions than the rates which are now being paid by some authorities.

Dental Technicians' Sick Pay:—Under the terms of service agreed by the Na-

tional Joint Council for the Craft of Dental Technicians, the members of the profession might be called upon to pay sick pay to one of their technicians for very considerable periods, which, in some circumstances, might extend for so long as 24 weeks. In such a case, the employer would almost certainly have to employ an additional technician and pay him the full standard wage.

AUSTRALIA

New Health Plan:—Australians will be able to insure their family's health for 42 cents a week under legislation to be introduced by the federal government. The government and approved hospital insurance organizations will meet most of the costs. But Australians will have to pay something towards it to prevent abuse and malingerers.

The new legislation is to encourage voluntary medical insurance and "help those who help themselves." In many cases a family's hospital bill can be met by a contribution of 42 cents a week to an insurance organization. In return, the family would be insured for about 750 forms of medical treatment.

The new project is not expected to meet opposition from Australia's 6000 general practitioners, who have already successfully prevented attempts to introduce a cradle-to-grave socialized national health service on British lines.—Vancouver Sun.

NEW ZEALAND

It is stated in the New Zealand Dental Journal that there are a considerable number of children coming forward that the Dental Nurses are unable to cope with. It is estimated that the age group

2½-16 years will increase by 117,000 from 1951 to 1960. The School Dental Service is maintaining 240,000 children, of whom 33,000 are all of pre-school age. It is not expected that this commitment could be increased within the next five years, because there will not be any increasing number of dental nurses to cope with it. There are 125,000 enrolled with the contracting dentists, 70,000 primary and 55,000 post-primary; and 25,000-30,000 have failed to enroll for dental benefits after leaving the State Service. There is a suggested immediate drive for more dental nurses to begin training in 1953, and it may be necessary to reduce the maximum age for adolescent services from 16 to 14. Already there is evidence that in the State Service the nurses are having difficulty in bringing forward children in a satisfactory state of dental health. At present in New Zealand the dentists are doing most of those children above Standard III. This is going to be a great problem in the future, and a very serious position, which the Government and dentists of New Zealand will have to face within the next ten years.

INDIA

First Five-Year Plan: "Under India's first Five-Year Plan, approved by both houses of parliament, the health program embraces the following priorities: (1) provision of water-supply and sanitation; (2) control of malaria; (3) preventive health care of the rural population through health and mobile units; (4) health services for mothers and children; (5) education and training and health education; (6) self-sufficiency in drugs and equipment; and (7) family planning and population control."

GENERAL NEWS

Study of Medical Debt in U.S.A.: According to a recent study of a government agency, about 19 per cent of all spending units reported debts in 1952 to physicians, dentists, and hospitals for dental and medical services. The average debt amounted to \$105 and the median to \$50.

The survey is based on a sample consisting of approximately 2,800 interviews with persons representing consumer spending units. According to an article appearing in the October 17 issue of U.S. News & World Report this debt represents unpaid physicians' bills. The article is entitled "Doctor Bills Pile Up: How Can Families Pay." It quotes the

\$105 average debt of those spending units having debt and the total medical debt of one billion dollars and then states: "Doctors have a problem in collecting this considerable portion of their income." The article further states: "Nearly one-third of those families in which the family head is less than 45 years old and the children are under 18 owes medical bills." The article implies that these are appalling conditions.

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Social Security in Germany: More than 10 per cent of West Germany's annual gross national product is devoted to various forms of social security, accord-

ing to a statistical study prepared by West German insurance companies. Approximately \$3,095,231,000 is contributed annually by employers and employees to provide social security benefits for unemployment, illness, industrial accidents, disabilities, old age pensions, births, dental care and optical services. The Government budget contributed the equivalent of an additional \$1,071,435,000 to make up the deficit for all social security services, which cost the West German people approximately \$4,166,166,000 annually.

These expenditures rank West Germany with Switzerland and the Scandinavian countries in the complexity and completeness of social security services on the basis of gross national product.—N.Y. Times.

Ammoniated Dentifrices have failed to live up to their promise and have no special value in reducing tooth decay, it has been reported in *The Journal of the American Dental Association*.

The report was based on extensive research studies made by Dr. B. G. Bibby, Director of the Eastman Dental Dispensary at Rochester, N.Y., and Lt. R. R. Hawes, of the Air Force Dental Corps at Randolph Air Force Base, Texas.

"There is no satisfactory evidence — notwithstanding the advertising claims — that a dentifrice with a high urea content reduces dental decay," they said.

Ammoniated dentifrices are tooth pastes and powders containing the ingredient urea to which the compound dibasic ammonium phosphate is usually added.

To evaluate the effectiveness of ammoniated dentifrices, the dental scientists conducted a one-year clinical and bacteriological study among school children between the ages of 7 and 13.

In the clinical study, an experimental group of 196 children brushed their teeth with an ammoniated dentifrice while 176 children served as a control group and brushed their teeth with a neutral or cosmetic dentifrice. Neutral or cosmetic dentifrices are those with conventional cleansing properties.

All the children were instructed in a proper toothbrushing technique, which was carried out under supervision at the beginning of each school day and independently at home in the evening.

The investigators found that during the test period, the children who used the ammoniated dentifrice were found to develop tooth decay at approximately the same rate as those who used the non-ammoniated dentifrice.

Drs. Bibby and Hawes said that their studies indicated that ammoniated denti-

frice had little effect on the presence of lactobacillus in saliva. A count of these bacteria in saliva has long been used to measure decay activity.

"No evidence was found that the use of the urea dentifrice altered the number of lactobacilli in the saliva to a greater extent than in the use of cosmetic dentifrices," the dental scientists said.

Similar findings were reported for a supplemental eight-week study of 75 young women dental hygiene students, also conducted by Drs. Bibby and Hawes. They concluded:

"The negative clinical observations and laboratory findings . . . offer adequate grounds for questioning the soundness of the concept that the ammonium ion dentifrices have any value in the prevention of dental decay."

The American Academy of Implant Dentures met at the Lakeshore Club in Chicago, Illinois on Feb. 6-8.

Dean W. H. Crawford, University of Minnesota Dental School was admitted as an Honorary Member of the Academy. In his subsequent "Dedicatory Address" of the Academy he said in part:

"The implant denture is certainly a Godsend to many unfortunate complete denture wearers. The procedure though somewhat complicated, involved and expensive is by all means justified when one considers the improvement in masticating ability, patient comfort, aesthetics and mental and physical health.

"The Implant denture is, moreover, a very important professional acquirement . . . This teamwork accomplishment has all the earmarks of professional scientific maturity . . . This truly is the scientific approach, the result of resources achieved by endeavour and an excellent example of the importance of learning in fundamental sciences . . . The idea of the implant denture was not absurd or impractical, but rather it was based on sound theory and planned by people with a capacity to think things through on scientific rather than empirical methods.

"You have had the courage to face our difficulties in providing satisfactory denture service to many needing something entirely different, something entirely new, and you have succeeded. It is my sincere hope for you that your present encouraging results will continue even more impressively."

There are 91,638 U.S. Dentists — one for every 1,691 persons—it has been reported in *The Journal of the American Dental Association*. The report was based on the newly-issued 1953 edition of the

American Dental Directory, published by the Association.

The newest tabulation of dental practitioners lists 84,215 civilian dentists and an additional 7,423 serving in the armed forces and the Veterans Administration.

Nearly three times as many dentists are now on duty with the armed services and the V.A. as were listed in the last Directory, published in the fall of 1950. At that time, 2,575 dentists were reported as serving in the military forces and the V.A.

The east coast and the west coast continue to be served by more dentists in

proportion than any other part of the country.

Among states, New York leads with one dentist for each 1,135 persons. However, the District of Columbia has overtaken New York with a ratio of one dentist for each 1,098 persons. Second among states is Minnesota with one dentist for each 1,344 persons and third is Connecticut with a dentist-population ratio of one to 1,391.

Least favourable ratios were reported for South Carolina with one dentist for each 5,477 residents and for Mississippi with one dentist for each 4,537 persons.

IN MEMORIAM

Garnet Percy Britton of Guelph, Ontario, died on February 22 at the age of 66. He was graduated from the College of Dentistry of the Royal College of Dental Surgeons of Ontario in 1915. Dr. Britton has always practised in the city of Guelph. He was a member of the Kinsman Club and the Masonic Order. He was a member of the Guelph Board of Education in 1940. He was a member of Norfolk Street United Church.

Dr. Britton is survived by his widow and one son, Dr. Garnet L. Britton of Guelph.

Reg. W. Frank of Vancouver, B.C., died February 13. He was graduated from the Faculty of Dentistry, Univ. of Toronto in 1916. After graduation he joined the Royal Canadian Dental Corps. Following the war he practised in several communities—Picton, Toronto, Peterborough and Detroit, Mich. He joined the

Dental Corps at the beginning of the Second World War. Following the war he commenced practice in Vancouver.

He was a keen athlete during his college days and during his service in the Dental Corps. He was a keen student of economics.

Dr. Frank is survived by his widow and one son.

Frances Joseph Anthony Daly of Cleveland, Ohio, died on February 21. Dr. Daly was graduated from the College of Dentistry of the Royal College of Dental Surgeons of Ontario in 1923.

Alve Etherton Heacock of Edmonton, Alberta, died on December 22. He was graduated from the College of Dentistry of the Royal College of Dental Surgeons of Ontario in 1903.

DIRECTORY

Canadian Dental Association Headquarters—234 St. George Street, Toronto, Ontario.

Matters relating to the publication of manuscripts or news items for the English Section of the Journal should be addressed to the Editor-in-Chief, Dr. M. H. Garvin, 314 Somerset Building, Winnipeg, Manitoba.

Matters relating to the French Section of the Journal should be addressed to the French Editor, Dr. G. de Montigny, 400 est Blvd. St. Joseph, Montreal, P.Q.

Matters relating to the business of the Journal should be addressed to the Business Manager, Dr. Don W. Gullett, 234 St. George Street, Toronto, Ontario.

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Forces de mastication vs obturations*

par GILLES PELLETIER, B.A., E.E.C.D., Montréal

Aussi longtemps que les bactériologistes n'auront pas trouvé le moyen efficace d'enrayer la cause de la carie, le dentiste sera placé devant le problème d'obturer les dents atteintes de ce mal rongeur. Il s'agira pour lui d'employer l'agent obturateur approprié, et de préparer la dent de façon à recevoir cet agent obturateur. L'opérateur devra en plus "penser plus loin que son nez", i.e. voir à ce que les forces de mastication, tout en s'accomplissant normalement, ne puissent faire tort à la dent elle-même, aux tissus environnants et à l'obturation proprement dite.

Le dentiste n'est ni un physicien, ni un ingénieur; c'est un médecin. Mais puisqu'il est aussi un prothésiste, et je veux parler ici de prothèse dans le sens général du mot, pourquoi ne va-t-il pas puiser à la mécanique et au génie, les données qui lui manquent? Les forces, que ce soient des forces hydrauliques, des forces mécaniques ou des forces de mastication, agissent toutes selon des principes de physique qui sont les mêmes pour tous les genres d'obturation.

D'un autre côté, la physiologie et l'anatomie sont d'un secours indiscutable pour la restauration des dents. Il est donc opportun ici d'étudier la mastication et l'obturation elle-même, en ce qui concerne la manière de la concevoir.

II—LA MASTICATION

Le phénomène de la mastication consiste en une série de fonctions hautement coordonnées, comprenant certaines parties de la cavité buccale. Cependant il est généralement considéré que les dents en sont les unités essentielles.

La fonction masticatrice peut être divisée en trois phases:

- a) l'incision
- b) le broiement direct
- c) la trituration, ressemblant à l'action du pilon et du mortier

Quand une quantité de nourriture de grosseur suffisante a été incisée ou a été placée dans la bouche après avoir été coupée au préalable, elle est immédiatement prise par la langue et transportée vers les surfaces occlusales des prémolaires et des molaires. Pour les actions broyante et trituration qui suivent immédiatement après, le maxillaire inférieur exécute deux différents types de mouvement:

- a) un mouvement de bas en haut dans le but d'obtenir le broiement direct
- b) un mouvement latéral pour la trituration.

Il est facile de comprendre que le nombre de mouvements variera selon la grosseur du bol alimentaire et selon sa consistance. Plus l'aliment sera dur, plus

*Travail préparé dans le service de Dentisterie opératoire de la faculté de Chirurgie dentaire de l'Université de Montréal.

il faudra une grande force de mastication et un plus grand nombre de mouvements masticateurs.

La forme anatomique des surfaces broyantes et triturantes des dents ne sont pas dessinées seulement pour la mastication, mais aussi pour la protection des tissus de support contre les forces excessives. Plus les dents sont effectives à remplir leurs fonctions dans le broiement des aliments, moins la tension sera grande sur le support. Il est évident que les dents qui possèdent des obturations devront remplir ces mêmes conditions, tant anatomiques que physiologiques.

Voici un exemple de ce qui arrive lorsqu'il y a lacune dans ces conditions: des points de contact proximaux mal faits ou un manque de contact amènent souvent la perte de la dent. En effet, l'amoncellement de la nourriture, les dégâts aux papilles interdentaires occasionnés par ce changement de position, ne sont certainement pas des moyens sûrs pour maintenir la solidité des dents.

La forme de la dent, par la fonction des embrasures interdentaires, apporte encore une nouvelle contribution pour la protection des tissus de support. Ce sont les espaces entre les dents adjacentes, lesquels espaces commençant au point de contact tendent à s'élargir vers les surfaces buccale, labiale, linguale et occlusale. La fonction des embrasures est de former des "échappatoires" pour les aliments durant la mastication. Le passage des aliments à travers ces "échappatoires" réduit la force qui est apportée sur les supports durant la mastication.

La force d'un coup de dent (Bite). Le nombre de livres-force avec lequel les mâchoires peuvent être fermées l'une sur l'autre ou sur un objet, varie grandement avec les différentes personnes. Ceci dépend, dans une large mesure, autant de l'état des membranes péri-dentaires et selon les habitudes personnelles dans l'usage des dents durant la mastication, que sur le pouvoir musculaire.

Modifications de la force d'un coup de dent. Certaines modifications de la force d'un coup de dent devront entrer en ligne de compte pour toutes les dents

que le dentiste doit obturer. Ces modifications sont amenées par:

- a) la manière dont on emploie habituellement les dents;
- b) l'infection ou les blessures faites aux tissus périapicaux;
- c) les maladies de la membrane péri-dentaire.

Souvent, le sujet arrête de mordre à cause de la douleur avant que l'effort musculaire soit complet. Un coup de dent sera plus fort si le sujet s'est habitué aux aliments durs. Ce sera le contraire si les aliments ingérés sont toujours mous ou s'il y a une cause quelconque—(carie, membrane péri-dentaire malade, obturation en suroclusion)—arrêtant l'effort, parce qu'il y a douleur.

Coup de dent sur la restauration. Le fait de mordre sur une substance coriace soumettra la dent à une dure épreuve, surtout pour l'obturation; et ceci est sujet à se renouveler souvent. Finalement, à moins que la restauration soit très forte, elle commencera à bouger. Alors, il ne restera qu'un pas à faire pour qu'elle soit délogée complètement de la cavité. C'est pour cette raison que les cavités pour les restaurations soumises à des chocs d'occlusion, sont préparées selon une forme carrée avec base horizontale; ceci leur donne une plus grande force de résistance.

Dans les cas où on ne peut obtenir cette forme de cavité sans causer de tort à la dent, on doit s'approcher le plus possible de la cavité idéale. Comme les cavités sont d'abord creusées par les caries, la paroi pulpaire est habituellement concave quand la carie est enlevée, la cavité présente alors une forme ovoïde. Si on laisse cette forme à la cavité, la restauration pourra bouger ou rouler, quand une force considérable vient en contact avec une partie de celle-ci. Cependant, il n'est pas nécessaire de détruire de la dent saine pour arriver à des parois planes; il s'agit tout simplement de faire une reconstitution en oxyphosphate. (1)

Moyenne des forces. La moyenne est de 171 livres pour les molaires et considérablement moins pour les prémolaires et les incisives. (2)

Des tests sur les premières molaires permanentes donnent:

8 ans	35 lbs
12 "	75 "
18 "	140 "
Adultes	175 "

De jeunes adultes ont enregistré jusqu'à 350 livres. L'instrument employé est le gnathodynamomètre. Pour les dents en bon état, le nombre de livres est plus grand pour les secondes molaires que pour les premières molaires et moindre pour les dents antérieures. La force des dents antérieures est moitié moindre que pour les premières molaires.

III—ANALYSE DES MATIÈRES OBTURATRICES POUR DE BONNES OBTURATIONS

Définition de l'obturation. Plusieurs auteurs semblent confondre le terme obturation et la matière obturatrice. Le dictionnaire Larousse définit l'obturation comme suit: "Opération qui consiste à combler avec un ciment ou un amalgame les cavités des dents cariées". Il serait plus juste d'étendre la définition à toute matière obturatrice, au lieu de s'en tenir qu'au ciment et l'amalgame.

Magitot donne, à mon avis, une définition beaucoup plus vraie. "L'opération qui consiste à combler avec une substance solide, inaltérable et indestructible, la cavité d'une carie placée, par un traitement approprié, dans les conditions propres à recevoir cette substance".

But de l'obturation des dents. (1)

- a) arrêter les progrès de la carie et prévenir les récidives;
- b) empêcher la contamination des dents contiguës;
- c) supprimer un foyer d'infection dangereux pour la cavité buccale et pour l'organisme tout entier;
- d) reconstituer les portions détruites et rétablir les fonctions physiologiques des dents.

Le traitement de la carie dentaire, qui consiste essentiellement dans la résection des tissus infectés et dans la destruction

des microorganismes à l'aide de pansements antiseptiques, ne donnerait que des résultats passagers si l'obturation de la cavité ne venait la compléter. Une fois obturée suivant certaines règles, la dent, ayant retrouvé ses rapports normaux avec les dents contiguës et les dents antagonistes, peut reprendre ses fonctions masticatrices dans le cas où elle les aurait momentanément perdues.

L'obturation d'une dent doit avoir pour résultat non seulement de remplir la cavité, mais encore de reconstituer les portions détruites de la dent, de manière à rétablir ses rapports anatomiques et à lui restituer ses fonctions physiologiques.

Les points de contact sur les faces proximales doivent être des points et non des surfaces.⁽²⁾ Il importe surtout que la force triturante reconstituée ne présente pas de saillie qui s'opposerait à la parfaite occlusion des maxillaires. Dans ce cas, en effet, chaque fois que les mâchoires tendraient à se rencontrer, l'obturation viendrait buter contre la partie correspondante de la dent antagoniste au lieu de l'effleurer. Il s'ensuivrait une gêne qui s'accentuerait davantage à mesure que se reproduirait le traumatisme, gêne produite par le froissement des ligaments alvéolo-dentaires et aboutissant à la périodontite. Il suffit d'un léger meulage de l'obturation pour faire disparaître ces inconvénients.

Pour éviter ceci, l'opérateur aura soin, aussitôt après l'obturation des cavités situées sur les faces triturantes, de s'assurer que l'articulation ou mieux que l'engrènement des dents se fait normalement. On peut se servir de papier carbone.

Il ne faut pas laisser d'émail non soutenu par la dentine car les efforts de la mastication en amèneraient rapidement la fracture.

Il faut aussi réunir deux cavités approchant l'une de l'autre; ceci est une raison mécanique: éviter la fracture d'un bord frêle de substance dentaire.

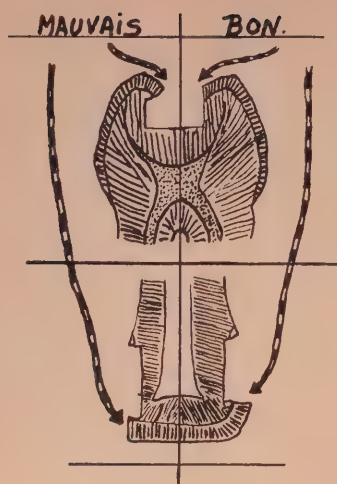
Les pressions sont rarement normales

(1) G. H. Deschênes: Cours de dentisterie opératoire.

(2) Black: Operative Dentistry Vol. No 1.

(1) Dr M. Guibaud.

(2) Cours de Dentisterie opératoire. (Dr. H. Deschênes.)



(d'après Dr René Boisson)



Réunion de caries distantes

QUALITES DES MATIERES OBTURATRICES

(1)

PHYSIQUES:

la mastication.

A.—*Solidité*, dureté et résistance à l'usure et à la déformation au moins égales à celles de la dent naturelle. La dureté a trait à la déformation par les pressions de la mastication

B.—*Plasticité*C.—*Adhérence* aux parois

CHIMIQUES:

A.—*Stabilité*B.—*Incorruptibilité*

ESTHETIQUES:

A.—*Couleur*B.—*Translucidité*RESISTANCE MECANIQUE DE
L'AURIFICATION

Contrairement à la plupart des substances obturatrices usuelles, l'or résiste à toutes les actions mécaniques qui peuvent se produire pendant la mastication.

Une aurification bien faite peut se retrouver intacte après 20 ans. On conçoit donc que, dans tous les points où la mastication exerce son action puissante, il soit indiqué de lui opposer la résistance de l'or.

et il y a lieu de tenir compte de la force appliquée, du nombre de dents, de l'angle d'incidence, du point d'application. Il ne faut pas que la force de mastication soit plus grande que la force de résistance apportée par les dents, car alors il y aura fracture de la dent.

Toute obturation métallique, subissant des efforts analogues à ceux de la dent doit satisfaire aux conditions de résistance. Ici les propriétés des métaux utilisés entrent en ligne de compte. Il est établi notamment que l'or à 24 carats utilisé pour l'aurification est trop malléable: son coefficient d'élasticité est trop faible, il se déforme, il coule littéralement sous la pression des dents antagonistes. Il ne faut pas oublier que la dureté de l'émail est au moins cinq fois plus grande que l'or; à plus forte raison de l'or à 24 carats.

Si une substance d'obturation parfaite n'existe pas actuellement, il est au moins nécessaire de connaître les caractères qu'elle devrait posséder: ce sont ceux de la dent naturelle, à laquelle il faut adjoindre l'incorruptibilité; et de plus, ceux qui concernent la facilité d'insertion comme la plasticité et, en dernier lieu, l'adhérence aux parois par scellement direct.

RESISTANCE A SUPPORTER L'EFFORT MASTICATOIRE (2)

Or adhésif: substance parfaite, surtout pour la restauration des angles.

Or mou: presque aussi parfait que l'or adhésif, moins les angles.

Amalgame: s'écarte et se fragmente sur les bords.

Silicate: bon par sa parfaite adaptation. Usure mécanique trop rapide si l'effort masticatoire agit sur lui.

Porcelaine: se fragmente sur les bords, mais bonne résistance à la pression.

IV—PREPARATION DE LA CAVITE EN RAPPORT AVEC LES FORCES DE MASTICATION

La forme de résistance. L'extension pour résistance est un terme appliqué à cette procédure, qui a pour unique objet l'extension de la forme de contour de la cavité en dehors des endroits sujets aux grandes forces, vers les endroits non fréquemment sujets à la force de broiement. On prend souvent à tort le terme extension pour prévention, tandis que le terme extension ne doit se rapporter qu'à la résistance aux forces. Une application propre de cette procédure comprendra une étude sérieuse de l'occlusion et de l'articulation pour chaque cas individuel.

La forme de résistance englobe aussi l'aménagement des parois d'émail affaiblies, une étude des déformations du matériel, de sa résistance sur ses bords, avec une vue d'ensemble de la forme selon laquelle la cavité devra être de façon à minimiser les effets de l'effort au cours du broiement.

Son importance est en proportion directe à l'exposition de l'obturation en occlusion et en articulation, et à la force avec laquelle les maxillaires viennent en contact. On doit préparer une obturation de façon à ce qu'elle puisse subir une pression de cent à deux cents livres et même beaucoup plus dans certains cas, particulièrement au niveau de la deuxième molaire et de la première molaire.

Des parois d'émail affaiblies sont celles en-dessous desquelles s'était infiltrée la carie ou celle dont on a enlevé de la dentine inutilement dans la préparation de la cavité; cette dentine en était leur support. De telles parois d'émail doivent être enlevées au ciseau, et particulièrement si elles doivent recevoir beaucoup de force durant la mastication ou durant l'introduction de la matière obturatrice.

La forme de résistance appliquée aux substances obturatrices. Nous devons considérer les propriétés des substances obturatrices employées dans chaque cavité. En préparant la cavité nous considérons le pouvoir de résistance du bord d'émail que nous sommes capables d'obtenir. Nous prenons aussi en considération la résistance du matériel obturateur employé aux forces de broiement, et cette propriété varie beaucoup. L'amalgame, même sous les conditions les plus favorables de manipulation, est sujet à se déformer et à devenir plus ou moins sphéroïdal avec souvent comme résultat d'exposer l'angle cavo-périphérique. De plus l'amalgame n'est pas ductile, alors les bords de cette obturation sont facilement fracturés par les forces masticatrices. Cette facilité à fracture est vraie aussi pour les ciments et les silicates et on doit apporter un grand soin quand nous insérons les bords de ces obturations.

L'or cohésif, spécialement quand il est combiné avec le platine, est notre meilleur matériel d'obturation pour résister aux forces de broiement sur les bords, et quand les bords ne sont pas trop minces, les coups répétés des dents antagonistes ne tendent qu'à fouler le matériel vers une adaptation plus parfaite aux bords d'émail. Si nous employons les incrustations, il est absolument nécessaire d'apporter un grand soin aux bords pour donner une bonne résistance aux forces; ceci ne s'applique pas à l'or principalement, mais surtout aux bords d'émail et au ciment qui scelle l'incrustation, à moins que celle-ci soit absolument parfaite et qu'elle soit adaptée d'une façon meilleure que la moyenne. Sans cela, il y a une ligne de ciment appelée à se dissoudre. Cette perte de ciment laissera les bâtonnets d'émail de l'angle cavopéri-

(1) Dr Pol Nespoulos Dentisterie Opératoire.

(2) Dr Godon Dentisterie Opératoire.

phérique sans protection et très sujets aux dommages qui pourraient survenir.

La forme de rétention. La forme de rétention est cette partie de la préparation de la cavité qui lui donne plus de chance à garder l'obturation en place lorsque les forces de mastication entrent en jeu. Une force qui tend à faire basculer une obturation hors de sa cavité est un des plus grands ennemis pour la permanence des obturations dentaires; la récurrence de la carie n'arrive qu'en second lieu.

La forme de rétention est partiellement faite durant la phase précédente de la préparation de la cavité, i.e., en même temps que la forme de résistance, mais il est nécessaire d'accentuer cette rétention afin que l'obturation résiste plus aux forces de mastication et qu'elle ne sorte en partie ou tout d'une pièce de son siège. Le maximum de rétention est requis dans les cavités qui comprennent une surface proximale. La perte de ce mur proximal rend ces obturations particulièrement plus exposées aux dommages causés par les forces de bascule durant les mouvements du maxillaire inférieur. Un fond plat pour ces obturations est absolument nécessaire pour la forme de rétention. Ces sièges, où repose l'obturation, doivent être taillés avec une surface à angles droits pour supporter les forces de mastication qui sont habituellement à angle droit avec le grand axe des dents.

L'addition d'un gradin pour les cavités de classe II et de classe IV apporte une plus grande forme de rétention. Par cette manière de procéder pour les cavités MO, DO, et MOD sur les prémolaires et les molaires, les forces appliquées sur les murs buccaux et linguaux de la cavité sont transmises ici sur les portions de ces mêmes murs qui font partie du gradin, et ainsi l'obturation résiste mieux à la force de bascule. Depuis Black, il est d'usage de considérer que des angles bien définis sont requis. La forme de rétention nécessaire y gagne beaucoup en laissant les murs qui entourent la cavité avec des angles bien définis. Voilà qui est bien pour la rétention, mais est-ce aussi bien pour la résistance de la dent une fois obturée. Nous en reparlerons plus loin lors de l'analyse synoptique de la classe II.

En un mot, la forme de rétention est celle que l'on donne à la cavité pour que la matière obturatrice résiste à un mouvement d'élévation ou de bascule et acquière de la stabilité dans toutes les directions. Deux moyens sont utilisés. Le premier consiste dans le creusement de points de rétention. On ne pourrait les employer pour la technique de l'incrustation; ils s'opposeraient à l'enlèvement de la cire. Le deuxième moyen est la queue d'aronde. Celle-ci peut être simple ou composée. Elle est composée quand elle comporte un gradin. Son rôle principal consiste à s'opposer à l'action des forces obliques.

Le reproche que l'on pourrait quelquefois faire aux queues d'aronde taillées en surface, dans les dents vivantes, c'est l'étendue de dent saine qu'elle nécessite pour devenir efficace. Mais, règle générale, il faut le faire quand même, selon la loi de la prévention qui nous oblige à ne jamais terminer une cavité dans un sillon. (1)

V—ANALYSE SYNOPTIQUE DE LA CLASSE II (2)

La classe II étant le type d'obturation le plus usuel et celle qui est le plus sujet aux forces de mastication, il serait opportun ici d'en faire une analyse synoptique. Tout ce qui suit se rapporte surtout à l'incrustation qui est la meilleure obturation . . . si elle est bien faite.

Par la forme de résistance, on entend celle qui donne aux murs de la cavité une épaisseur ou une forme appropriée pour qu'ils puissent résister aux efforts "Cette forme, d'après Black, doit présenter des murs plans et des lignes d'angles droits, se joignant en des points définis."

En voici les raisons: (d'après McGehee)

1°—"Le siège de l'obturation doit être placé à angle droit" par rapport aux efforts exercés. Ceci n'est réalisable que pour les poussées axiales.

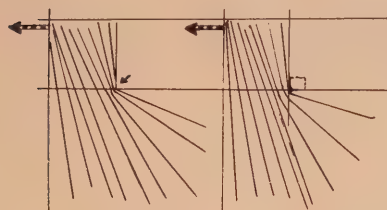
2°—"L'or ou les matières obturatrices

(1) G. H. Deschênes: *Cours de Dentisterie opératoire.*

(2) Ce qui suit est tiré du Volume "Inlays à Arçons et à Crampons", écrit par le Dr René Boisson.

s'adaptent mieux aux parois planes qu'aux parois courbes ou qu'aux angles rentrants." Ici certains auteurs, preuves à l'appui, préconisent d'utiliser pour les incrustations des angles et des lignes d'angle arrondis.

Il paraît que la forme de résistance est ainsi très améliorée et renforcée.⁽¹⁾ En effet, deux experts en force et en tension (H. Faure et J. Muller) ont prouvé qu'une pièce soumise à des efforts supporte une charge moindre si les angles sont taillés à angle vif que si ces mêmes angles sont conçus avec un léger congé. La matière subit des tensions énormes au niveau des angles vifs, alors que les tensions sont mieux réparties si la section est arrondie.



ANGLE VIF

CONGE

(d'après Dr René Boisson)

On doit donc tenir compte de cette particularité importante dans la taille des cavités pour incrustation. Puisque la cire se modèle aussi bien dans un cas que dans l'autre, puisque l'incrustation est cimentée et que son adhérence n'est pas due à l'élasticité de la dentine, puisqu'il existe enfin d'autres moyens de rétention des incrustations que des lignes d'angle et des angles vifs, il faut donner la forme de résistance que commande l'expérience dans d'autres domaines.

3°—"La forme cubique donnée à la cavité évite les fractures des molaires et prémolaires en ne permettant pas à l'obturation de pénétrer comme un coin entre les parois à angle ouvert." Il s'agit en

l'occurrence d'une action dirigée dans le sens axial. Un tel argument est mécaniquement exact s'il s'agit d'un coin mobile entre deux parois, et dont l'extrémité ne rencontre pas le fond de la cavité. Mais là où l'obturation est assise sur un siège plat, il importe peu que les parois soient absolument parallèles. En effet l'action de coin ne peut se faire sentir, car elle est amortie en premier lieu par le siège (fond de la cavité, paroi pulpaire).

Les fractures sont fréquentes dans les cavités classe II des prémolaires, mais les vraies raisons sont d'un ordre mécaniquement différent. *Ce sont les efforts transversaux exercés par l'intermédiaire du bol alimentaire*: ce n'est pas en serrant fortement ou violemment les mâchoires que la dent se brise, mais au moment des repas, s'il s'interpose un noyau, un os, un corps dur quelconque conformément à l'analyse des forces.



L'ERREUR

LA REALITE

(d'après Dr René Boisson)

D'ailleurs, les auteurs et les professeurs sont d'accord pour donner une forme de dépouille aux cavités . . .

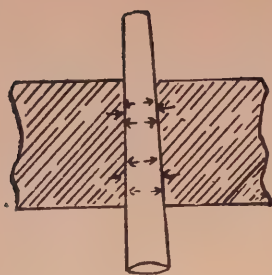
En effet une digue, un remblai ou un mur, destiné à supporter des efforts latéraux ont une section trapézoïdale élargie à la base. Cette troisième raison semble être nulle théoriquement et pratiquement. Elle semble n'avoir pour elle que les apparences de la vérité.

4°—"Une obturation est retenue avec plus de force par des parois opposées parallèles que par des parois obliques." En ce qui concerne les incrustations, c'est à discuter. Prenons un exemple dans la mécanique: une gouille conique coincée fortement par les parois d'un logement approprié est très difficile à enlever.

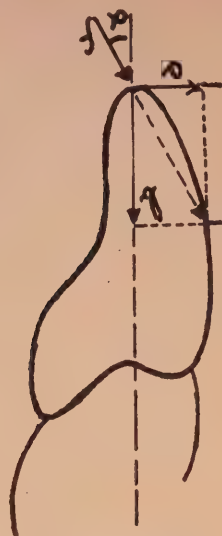
Ainsi, si les parois latérales de la cavité sont rencontrées par l'incrustation un peu

(1) H. Faure: Sur nouvelle méthode optique de détermination des tensions extérieures. 1929.

J. Muller: Etude de trois profils de murs encastres sollicités à la compression et à la flexion. 1930.



avant qu'elle touche le fond et si au moment du scellement nous chassons par un coup de maillet automatique cette incrustation dans la cavité, elle s'enfoncé légèrement en se comprimant elle-même et en exerçant des pressions latérales sur les parois. Mais il faut que ces parois soient assez épaisses pour soutenir la pression. Dans les cas de MOD l'action des forces est renversée. Alors, c'est la forme de la dent qui peut être assimilée à la goupille et l'incrustation qui est assimilable à la cavité.



(d'après Dr René Boisson)

VI—ANALYSE DES FORCES DE MASTICATION SUR LES DENTS (I)

1° — *Le cas des incisives.* Dans le mouvement simple d'incision, la force est le résultat de l'action des masséters, ptérygoïdiens internes et fibres verticales ou temporales.

La force n'a pas habituellement le même sens que l'axe de l'incisive. Au moment du contact, la force est décomposable en deux composantes, l'une axiale (b) équilibrée par la résistance de l'alvéole et normalement neutralisée par celui-ci dans l'axe de résistance de la dent, l'autre, transversale (a) qui est équilibrée par la résistance de la substance dentaire et la résistance osseuse de la paroi alvéolaire.

Chaque dent est donc soumise à des efforts qui lui sont spécifiques et qui dérivent:

- 1°—de sa forme anatomique
- 2°—de sa position dans l'arcade

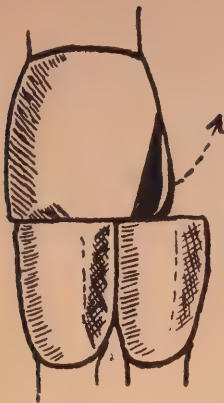
3°—des mouvements principaux de l'arcade dentaire qui sont transmis sous forme de chocs et auxquels elle doit résister.

L'analyse de ces variables est d'une importance capitale pour l'étude de la préparation des cavités d'inlays, car ce qui est applicable aux dents l'est également aux parties qui en subsisteront, ainsi qu'aux parties métalliques qui se substitueront aux parties de substance.

a) *Préhension:* La composante axiale est la plus grande ou du moins celle qui domine, est équilibrée à l'endroit du maximum de résistance ou axe de résistance. Elle a souvent pour résultat d'ébrécher ou d'user le bord tranchant, de fracturer les coins et de disloquer les inlays de coin (classe IV) dans la direction axiale.

La composante latérale est la plus faible ou secondaire: elle tend à briser le bord incisif de l'intérieur vers l'extérieur. Appliquée sur une incrustation, elle exerce sur elle la pression maxima à l'endroit de la plus faible résistance de la dent. Elle tend à disloquer les incrustations classe IV dans le sens vestibulaire en effondrant le mur labial. Le cas se présente d'une manière analogue pour les

(1) Tiré de: Inlays à arçons et à crampons, par Dr R. Boisson.



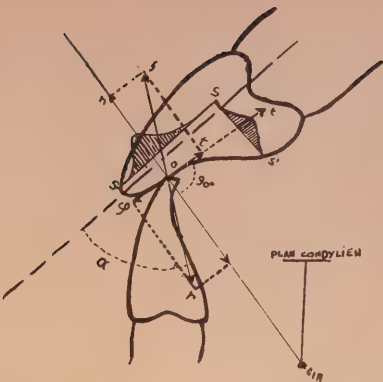
incisives supérieures et inférieures. Plus les dents font entre elles un angle ouvert, plus elles sont sollicitées labialement. De même, les parois, et éventuellement, les murs labiaux des cavités d'incrustation, sont sollicités du côté vestibulaire.



(d'après Dr René Bolsson)

b) *Incision*. Les condyles sont ramenés vers l'arrière. La force est alors antéro-postérieure et oblique de bas en haut. Dans le cas d'une incrustation classe IV, la composante transversale, normale à la surface linguale est équilibrée par le mur labial et la force axiale l'est par le mur axial.

Le mur labial supporte le maximum



(d'après Dr René Bolsson)

d'effort; alors en tenir compte dans la préparation de la cavité. L'incision des aliments est obtenue par une pression très grande vers l'avant alors que la mandibule est projetée vers l'arrière et en haut: tout paradoxal que cela puisse paraître. Les facettes d'usure des incisives sont la preuve bien connue de ce mécanisme.

Et nous avons comme conséquences:

- 1°—l'incisive supérieure a une tendance à se briser vers le dehors dans le sens sagittal.
- 2°—les incrustations ont une tendance à être chassées vers le côté labial.
- 3°—le mur labial doit être suffisamment résistant et ne pas être inutilement affaibli dans son épaisseur.

On peut résumer ainsi pour les incisives classe IV:

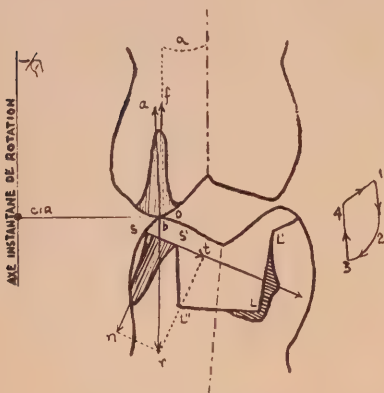
	Force dirigée dans le sens:	Résistance opposée par:
A) Forces dominantes	a) Axial b) Sagittal postéro-antérieur c) Proximal	Mur axial Mur labial Point de rétention
B) Forces secondaires	a) Incisif b) Mésio-distal c) Proximo-axial	Points de rétention - Queue d'aronde Points de rétention - Queue d'aronde Mur pulpaire

2°—*Le cas des prémolaires et des molaires.* Ici la mastication a un mouvement de direction frontale, centripète et oblique de bas en haut et de dehors en dedans.

Quelque soit la façon dont la mastication s'effectue au niveau des molaires, on constate certains phénomènes, que l'analyse des forces permettra d'expliquer et qui feront comprendre comment il faut prévoir la résistance que devront présenter cavités et incrustations. Ces constatations sont l'usure des molaires et leur mouvement pendant la mastication. Les cuspidés buccales des molaires inférieures et les cuspidés linguales des molaires supérieures montrent le plus d'usure. Il se fait un mouvement de rotation durant la mastication afin de bien broyer les aliments.

a) *Préhension:* Il y a une action musculaire élévatrice et externe, masséter et fibres verticales du temporal.

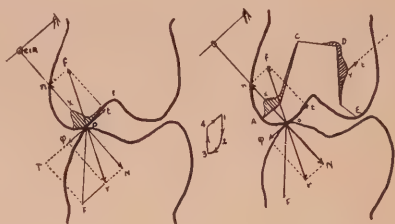
Au premier temps de la mastication (préhension), la molaire supérieure subit une force perpendiculaire à son axe; la molaire inférieure, si elle a une obturation, subira une force décomposable. Les composantes (a) et (b) seront équilibrées par les murs de la cavité. L'intensité de ces forces est représentée sur le schéma par les lignes hachurées.



(d'après Dr René Boisson)

b) *Ecrasement:* Dans ce deuxième temps, la cuspidé vestibulaire inférieure glisse sur la cuspidé vestibulaire supérieure, alors que dans la plupart des cas, la cuspidé linguale inférieure n'a pas encore touché la cuspidé linguale supérieure.

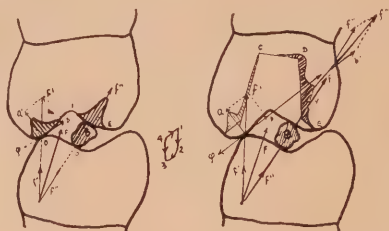
La force appliquée sur les molaires au moment du contact n'est pas dirigée dans un sens parallèle au sens du mouvement de la mandibule.



(d'après Dr René Boisson)

La force (f) appliquée se décompose. La composante (a) agit surtout sur le cuspe vestibulaire et est équilibrée par la paroi buccale de la cavité. La composante, (b) quoique moins forte, est équilibrée par la paroi linguale. Si la dent était sans obturation le cuspe vestibulaire recevrait à peu près seul toute la force.

Tout ceci se passe surtout au moment du glissement des deux cuspes vestibulaires. Lors de l'écrasement proprement dit, les deux cuspes buccal et lingual subissent la force.

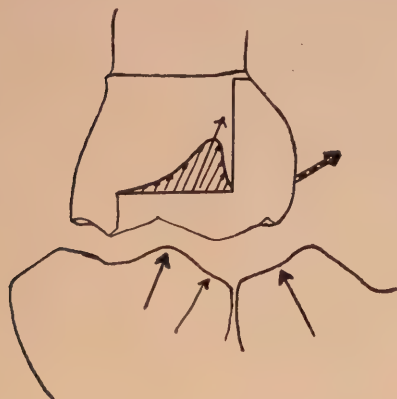


(d'après Dr René Boisson)

Donc le temps de la mastication, où les forces exercées sur les dents supérieures produisent leur maximum d'effet

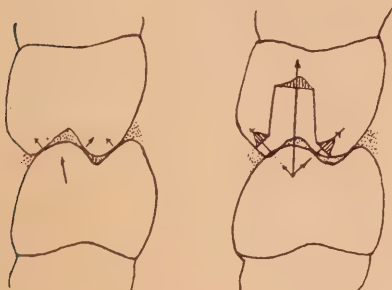
dans un sens transversal vers l'intérieur, tend à basculer ou à briser la dent supérieure dans ce sens. L'inverse est vrai pour la dent inférieure. Ceci est applicable aux incrustations.

L'engrenage des cuspes, l'obliquité des axes et l'action musculaire peuvent avoir en outre une composante mésiale et distale qui a une tendance à déloger l'incrustation dans ces différents sens.



(d'après Dr René Boisson)

c) *Position centrique*: Si la dent a une incrustation, il faut que la cavité soit construite de telle sorte que si la résistance des parois devient insuffisante en un point, l'incrustation lui supplée par une compensation de ces propriétés d'élasticité, de tenacité et de dureté, i.e., par sa rigidité.



(d'après Dr René Boisson)

Résumé pour la classe II:

	Forces dirigées dans le sens:	Résistance opposée par:
A) Forces principales	a) Axial b) Buco-lingual c) Proximal	Mur pulpaire Mur lingual Queue d'aronde
B) Forces secondaires	a) Pulpo-occlusal b) Linguo-buccal c) Proximo-axial	Adhérence aux parois Mur buccal Mur axial

30—*Corollaire*: Il faut tenir compte de certaines actions qui sont l'inverse de celles qui ont été décrites. Ces actions sont habituellement faibles, elles ne sont importantes que lorsque les aliments sont visqueux ou gluants. Elles ont alors une tendance à exercer une force de traction sur les dents et partant sur les obturations.

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Université de Montréal
2900 Boul. du Mont-Royal
Montréal.

Nouvelles des Sociétés

Société de Stomatologie

La Société de Stomatologie de Québec continue ses activités pour l'année 52-53, en organisant pour la semaine du 12 au 18 avril prochain, une Semaine d'Hygiène Dentaire, patronnée par la Chambre de Commerce des Jeunes du Québec. Différentes organisations ont été mises sur pied telles, les examens d'enfants, programmes de radio, présentations de film, etc.; le tout se terminera par une journée d'étude pour les dentistes.

•

Société Dentaire de Montréal

A la suggestion du docteur Charette, le président, l'assemblée adresse des félicitations au docteur Marcel Archambault pour son importante communication devant l'American Association of Endodontists, à Chicago. Des condoléances furent adressées à la suite de la mort docteurs Trudeau, Lapointe, Berny, Rosen et Weiss. Le docteur Charette invite tous les membres présents à se faire les publicistes de notre prochain congrès les 6-7-8 mai prochain.

Et sans plus tarder, le docteur Jacques Demers présente le conférencier, le docteur Paul Dionne de Joliette. Il traite des

différentes attaches de pont sur dents vivantes. La qualité la plus importante pour une attache, dit-il, est la rétention. Le docteur Dionne est un adepte de la préparation appelée "Slice." Avec des projections, il en démontre les avantages et les différentes modifications: comme la "Slice-Lock", avec pivot, la "Slice Channel", de Gillett, et la "Twin-Lock", les différentes attaches de Gillett, l'overlay à rainure et le "Pin Ledge". Pour les dents antérieures, comme attache, le docteur Dionne préconise les attaches ordinaires à rainures, les attaches avec clavette, et celles avec trois puits de rétention. Elles ont de grands avantages au point de vue solidité et esthétique.

Le conférencier donna ensuite certains conseils essentiellement pratiques sur la manipulation de la cire, sur la coulée, la mise en revêtement. Il expliqua la raison de certains de nos échecs en couronnes et ponts, dans une mauvaise manipulation de la coulée, de la cire, de l'or et du chauffage. Le docteur Dionne présenta ensuite des modèles sur table et répondit aux questions de l'auditoire. Cette conférence, pleine d'esprit et d'humour, fut très goûtée de l'auditoire. Le docteur Guy Langelier remercia le conférencier. Le docteur Charette demanda les services du docteur Dionne pour notre prochain congrès.

pour la première fois à Montréal . . .

Congrès National des dentistes canadiens

à l'Hôtel Mont-Royal

les 19, 20, 21, 22 octobre

ne pas l'oublier

Nouvelles de l'Association

Recherches

La revue *Science* publiait récemment un article intitulé: "Les embûches de la science américaine", dans lequel on discutait quelques facteurs inhérents au progrès de la science en général. D'abord, "il faut que le travail de recherche soit du domaine public, qu'on le fasse connaître, qu'on l'enseigne et qu'il puisse être soumis à la critique". Par ces paroles, on veut dire que tous et chacun ont le droit de discuter librement les questions scientifiques, même sur le terrain international et qu'il n'y ait aucune barrière aux échanges d'idées et d'opinions. Ensuite, "on ne doit pas ennuyer les savants par des atteintes à leur liberté personnelle". De plus en plus, la peur, la peur de voir le monde scientifique héberger des agents secrets, dans ces milieux où se poursuit sans cesse le progrès de la science, lui impose des restrictions à la liberté de pensée et d'expression. Enfin, "le grand public doit s'imposer l'obligation d'encourager la science, qui se dévoue pour son bien-être, immédiat ou lointain". Cette déclaration vient de la tendance actuelle de porter les recherches vers des problèmes subventionnés par de fortes sommes d'argent. Dans le domaine des recherches médicales, entr' autres, on a répété que les donateurs s'attendent à des découvertes sensationnelles tous les jours, sans qu'ils songent, un instant, que ces trouvailles spectaculaires n'arrivent qu'à la suite d'un travail d'approche de longue haleine, fastidieux et lent.

Pellicule cinématographique: "La carrière de dentiste, au Canada"

On a mis au point une pellicule cinématographique pour servir l'orientation professionnelle; un fascicule complète le film. Le but de cette bande est de servir à tous ceux qui donnent des conférences aux étudiants des cours secondaires pour leur faire connaître la profession de dentiste.

Le scénario et le volume ont été pré-

parés par les anciens de la faculté dentaire de l'Université de Toronto et offerts gratuitement à l'Association Dentaire Canadienne. L'A.D.C. a maintenant terminé l'impression de ces deux travaux. Grâce à cette réalisation les conférenciers pourront préparer plus facilement leur communication.

On peut se procurer des copies de ce film et du manuel au coût de \$2.50, pour les deux. On adresse sa demande à:

Associated Screen News
108 Peter St.
Toronto 1, Ontario.

Acquisitions récentes de la bibliothèque

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Congrès de la Société Dentaire de Montréal

à l'Hôtel Windsor, les 6, 7 et 8 mai 1953

PROGRAMME

Mercredi, le 6 mai

- A.M. 10:00—Inscription
 10:30—Films scientifiques
 12:30—Déjeuner libre
- P.M. 1:00—Inscription
 2:30-3:30—Session générale
 3:30-5:30—Cliniques de table
 7:00—Dîner du Président (dames invitées)

Jeudi, le 7 mai

- A.M. 9:00—Inscription
 9:30-10:30—Cliniques répétées. Nos 1,2,3,4.
 10:30-11:45—Clinique continue (1ère séance).
 10:30-11:30—Session générale
 11:30—Films scientifiques
- P.M. 12:30—Déjeuner de la Maison Frosst.
 3:00-4:00—Session générale
 4:00-5:00—Cliniques répétées. Nos 1,2,3,4.
 5:00-6:15—Clinique continue (2ème séance).
 8:30—Divertissements ou temps libre.

Vendredi, le 8 mai

- A.M. 9:30-10:45—Clinique continue. (3ème séance).
 9:30-10:30—Cliniques répétées. Nos 1,2,3,4.
 10:45-11:45—Session générale.
- P.M. 12:30—Déjeuner.
 2:30-3:30—Session générale.
 3:45-5:10—Forum.
 5:00—Assemblée annuelle de la Société.
 7:00—Coquetel—Buffet—Danse.

En plus du dîner et du buffet-coquetel, un programme spécial a été préparé pour les dames.

Cliniques répétées:

- Paul Dionne D.D.S., Joliette,
 "Bridgework sur dents vivantes"
- W. T. Sweeney, National Bureau of Standards, Washington, Etats-Unis
 "Des résines en art dentaire"
- G. E. Ste Marie, D.D.S., Springfield, Mass.
 "Prothèse: méthode de Hardy"

Sessions générales:

- R. DePlaen, D.D.S., Montréal, "Considérations d'intérêt dentaire chez les tuberculeux"
- R. Dufresne, M.D., Montréal, "Nos patients et leur dentiste"
- H. K. Brown, D.D.S., directeur de la division dentaire du Ministère de la Santé Nationale et du Bien-Etre Social, Ottawa,
 "Fluoruration de l'eau potable au Canada"
- Irving Glickman, D.D.S., Tufts College Dental School, Boston, Mass.
 1—"Bone Factor"
 2—"Basic Principles of Periodontia"

Clinique continue:

- (en trois séances) Cas pratiques:
 Jacques Demers, D.D.S., Montréal,
 "Prise d'empreinte avec substances hydrocolloïdales pour inlays et attaches de ponts"

Pour renseignements: Louis Lépine, D.D.S., 614 Medical Arts Bldg., Montréal



Photo by Canadian Government Travel Bureau, Ottawa, Canada.

**Mount Athabasca and Athabasca Glacier from Banff-Jasper Highway
Jasper National Park, Alberta, Canada**

Life's Rich Fulfilment

There is little satisfaction to be gained from doing things that hold no difficulties. It is the tough task that brings a keen sense of worth and power to the man who wins the fight. His failures test his courage, and his problems prove his might. Until a man has conquered loss and overcome defeat, he cannot fully understand just why success is sweet.

One should be thankful for disappointments, for battles lost, and for mistakes that seem to charge an overwhelming cost. One should be thankful for days of doubt, when it is hard to see that all things work together for the good that is to be. And one should be glad for all that life has brought, because then you know that men must brave adversities if they would greater grow.

"Scrap Book."



Photo by Mackle

DR. L. K. BROOKS

Calgary, Alberta

Alberta Editor, Journal of the C.D.A.

President Calgary Dental Society.

Chairman, Public Relations for Alberta Dental Association.



The Journal

OF THE CANADIAN DENTAL ASSOCIATION

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TORONTO, MAY, 1953

No. 5

Diseases of the Tongue

by LESTER W. BURKET,* D.D.S., M.D., Philadelphia, Pennsylvania

THE TONGUE is an organ which is readily accessible for examination. It is an important aid in clinical medicine in evaluating the state of hydration of the patient and his general nutritional state, although it is rarely of specific diagnostic value. It is one of the most common oral sites of psychoneurotic pain and of suspected cancerous lesions. An examination of the tongue should include an observation of the colour and the consistency of this organ, and the degree of papillary coating in addition to a careful inspection for lesions which might be present on any surface of the tongue.

Most of the lesions of the tongue occur on the dorsal surface and thus involve the papillary coating. The hair-like filiform papillae are the most numerous papillae on the tongue and they are found over the entire surface. The fungiform papillae, which have a vascular connective tissue core, are less numerous. They are also found over the entire dorsum of the tongue but are most numerous at the tip and along the lateral margins of the tongue. The circumvallate papillae, numbering from 11 to 13, are located at the posterior part of the tongue just anterior to the lingual lymphoid tissue. They are arranged in the form of an inverted "V".

The tongue when relaxed has a normal muscular consistency. The

evaluation of the consistency of this organ should always be made when the tongue is relaxed.

The true diseases of the tongue are few in number and except for neoplasms involving this organ and the lingual lesions of systemic disease, such as lues and tuberculosis, they are relatively unimportant pathologically. The developmental tongue lesions of greatest importance include the abnormally fissured tongue and median rhomboid glossitis.

THE ABNORMALLY FISSURED TONGUE

The abnormally fissured tongue is the most common developmental lesion. It may be a familial characteristic. A deep central groove or fissure is most commonly seen but a wide variety of groove patterns may be observed varying from those at right angles to the lateral margin of the tongue to those having a branching vein-like pattern. These fissures can be best appreciated if the lateral margins of the tongue are rolled downward.

Patients are usually unaware of this condition until a mild inflammation occurs in the depths of the grooves or the tongue is accidentally burned. Then, they associate this grooved condition of the dorsum of the tongue with the recent symptoms and it may be very difficult to convince the patient of the

*Professor Oral Medicine, School of Dentistry and Graduate School of Medicine, University of Pennsylvania.

true origin of this lesion. A fear of cancer is frequently associated with abnormal fissuring of the tongue. These patients are also said to be more susceptible to lichen planus of the tongue and geographic tongue.

Abnormal fissuring of the tongue usually requires no treatment. If inflammatory symptoms are experienced, the fissures can be opened by rolling the lateral margins of the tongue downward and cleansing the grooves with 3% hydrogen peroxide and then applying a 1% solution of crystal violet. If the patient has cancerphobia, this fear should be allayed. There is no evidence that an abnormally fissured tongue predisposes to malignant changes.

MEDIAN RHOMBOID GLOSSITIS

Median rhomboid glossitis is less common than an abnormally fissured tongue but it presents greater diagnostic problems. This lesion occurs almost exclusively in males. The lesion of median rhomboid glossitis consists of a smooth fissured or irregular raised diamond shaped area in the midline of the tongue just anterior to the circumvallate papillae. This depapillated area is a portion of the base of the tongue which has become interposed between the lateral halves of this structure before fusion. This smooth diamond shaped area frequently has a grooved or tufted appearance. The surface may become traumatized or mild inflammation develop in the grooved areas.

Median rhomboid glossitis may be mistaken for a neoplastic growth and at times this lesion has caused much fear, diagnostic problems and at times extensive and unnecessary surgery.

GEOGRAPHIC TONGUE (Wandering Rash of the Tongue)

Geographic tongue is a common true disease of the tongue. The exact cause for this peculiar condition is not known. It may be seen in infants, but it is more frequently present in children and young adults of either sex. It frequently appears just before the

menstrual period in women and individuals with an allergic history seem to have a predisposition for this lesion. It is aggravated during periods when allergic manifestations are present.

The characteristic lesions of geographic tongue consist of irregularly shaped depapillated areas which are surrounded by a reddish zone and then a raised yellowish margin adjacent to the normal papillae. These areas vary in size and shape from day to day. This rapid change in form and distribution of the lesions, especially when associated with mild pain, gives rise frequently to the fear of cancer. Pain is usually absent but a mild discomfort may be experienced by some patients when acid or highly seasoned foods are eaten.

Geographic tongue can be usually diagnosed on clinical examination. Lichen planus of the tongue presents at times a similar clinical appearance but the bluish-white lesions of this disease are not associated with depapillated zones and their form and position does not change from day to day. Leukoplakia of the tongue should present no problems in differential diagnosis.

Geographic tongue requires no treatment other than to assure the patient that it is a benign condition with no tendency to malignant degeneration. It may persist for years. These lesions may disappear spontaneously only to return at some later period of time. When pain is present, a mild non-irritating antibacterial agent such as 1% crystal violet can be used.

TRUE BLACK TONGUE (Lingua Negra)

Drugs, candies, cosmetics and articles of food may impart an abnormal colour to the tongue, however, the brownish black discolouration on the dorsum of this organ in true black tongue results from the growth of a pigment producing mould or fungus. This can be readily cultivated when appropriate culture media are employed. In some instances it can be demon-

strated that the mould was from an exogenous source and introduced into the mouth by a contaminated pipe stem or cigarette. In most instances it is impossible to determine an exogenous source of the mould. An abnormally coated tongue seems to favour the development of a true black tongue.

The use of penicillin and other antibiotics such as aureomycin and streptomycin, topical application, oral or parenteral administration predispose to a true black tongue. The balance of the oral flora is apparently modified by the antibiotic to permit the pigment producing yeast forms to grow in large numbers. Individuals who develop a black tongue in conjunction with antibiotic therapy will usually experience a recurrence of the black tongue when the antibiotic is again used. The development of this condition does not require the cessation of administration of the antibiotic.

The continued use of oxygen liberating agents such as hydrogen peroxide and sodium perborate may be associated with a black hairy tongue in some patients.

The treatment for this condition consists of having the patient lightly brush the dorsum of the tongue when the teeth are brushed. A 10-20% aqueous solution of sodium caprylate is an excellent fungicide and it has a good therapeutic effect. If an oxygen liberating mouthwash is being used it should be withdrawn.

GLOSSODYNIA AND GLOSSOPYROSIS (Painful and Burning Tongue)

Painful (glossodynia) burning (glossopyrosis) tongue is a common complaint, particularly in the postmenopausal female. It may result from systemic causes, local causes, or a combination of the two. From the standpoint of diagnosis and treatment planning, it is desirable to group the patients with these symptoms into 1) those who present demonstrable lesions on the tongue and 2) those who do not present any visual change in the

colour, coating or consistency of this organ.

PATIENTS WITH DEMONSTRABLE TONGUE LESIONS

As a general rule, these patients comprise the smaller group. A careful search should be made for local causes of irritation such as calcareous deposits on the lingual surfaces of the mandibular anterior teeth, poorly finished dental restorations, fractured teeth or irritating partial prosthetic appliances. The patient should be questioned carefully about tongue habits that might be responsible for the irritation. If a female patient complains of cheilitis along with the glossopyrosis and if the inflammation is limited to the tip of the tongue, the possibility of allergy to lipstick should be considered.

Systemic conditions which might be associated with glossodynia and glossopyrosis vary from simple iron deficiency anaemia to pernicious anaemia and nutritional deficiency states. In iron deficiency anaemia, the tongue is usually pale in colour, has a slightly deficient coating and exhibits a loss of muscular tone with only slight evidence of inflammation. The tongue lesions of pernicious anaemia are characterized by a marked atrophy of the papilla tip and of the lateral margins of this organ. The involved tissues have a fiery red colour and are very painful. The tongue lesions in pernicious anaemia frequently undergo periods of spontaneous remission. The dorsum of the tongue is usually devoid of papilla, red and painful in severe nutritional deficiencies. In addition, the mucous membranes of the lips and cheeks may manifest the characteristic changes associated with these disorders.

Patients with glossodynia and glossopyrosis with demonstrable tongue lesions should have a complete blood count and any other laboratory studies which might be indicated. The symptoms in these patients will usually respond to the local and/or systemic treatment which is indicated. If the

tongue lesions are associated with nutritional deficiencies, intensive and prolonged therapy may be necessary for regression of the symptoms and at times the lingual changes are irreversible.

PATIENTS WITH PAINFUL AND BURNING TONGUE WITHOUT OBSERVABLE LESIONS

These patients usually comprise the larger clinical group and they consist mainly of postmenopausal females. They are anxious, worried individuals who commonly have an expressed or unexpressed fear of malignancy. They will usually give a history of having seen many physicians or dentists for their complaint.

The tongue in these patients presents no lesions which could account for their symptoms. It is characteristic of patients in this group that the pain does not interfere with sleep or with eating. Frequently, the pain does not follow any anatomic distribution. It is usually more annoying when the patient is fatigued.

These patients should be given a complete oral examination including a careful study of the tongue. As a rule no increase in pain is experienced when the tongue is gently palpated. It is frequently stated that the pain seems to be "deeper in the tongue". The vertical dimension or intermaxillary space should be carefully studied since occasionally a decreased intermaxillary space is associated with lingual neuralgia. During the examination of these patients it is desirable to comment on the apparent normal appearance of the surface of the tongue.

A complete blood count should be requested to rule out an early pernicious or secondary anaemia.

The patient should be informed that the laboratory findings have ruled out the possibility of the common systemic diseases as a cause of the symptoms. Moreover, the careful examination has ruled out the presence of any neoplastic growth. The painful symptoms can be best explained on the basis of a neuralgia, hence topical medication is of no

value in treatment. It is best not to prescribe any medication as most of these patients represent mild examples of psychoneurotic pain. The services of a sympathetic psychiatrist will do these patients more good than the use of a variety of medicaments. Once the patient is assured that no malignancy is present they will frequently volunteer the statement that if that is the case they can endure the pain.

THE ABNORMALLY COATED TONGUE (Furred or Hairy Tongue)

A certain degree of tongue coating is normal. It is usually best developed during adolescence and early adult life. The degree of tongue coating also varies during different periods of the day, being most prominent in the morning.

An abnormally coated tongue has long been erroneously assumed to be indicative of some gastro-intestinal disturbance. It is actually indicative of a disturbed oral physiology which permits the filiform papillae to grow longer than normal. Constipation or other gastro-intestinal disturbances are not a direct cause of an abnormally coated tongue. Aside from disturbances in oral physiology associated with relative states of dehydration and the use of liquid or soft diets, some mouthwashes may cause an abnormal growth of the filiform papillae in some individuals. Oxygen liberating drugs such as hydrogen peroxide, sodium perborate and potassium permanganate may be responsible for an abnormally coated tongue. The patient with an abnormally coated tongue does not usually experience any symptoms because of this abnormal papillary growth. This condition is commonly associated with an objectionable breath.

The treatment of an abnormally coated tongue consists mainly in restoring normal oral physiology. If oxygen liberating medicaments are used they should be stopped. The patient can be instructed to brush lightly the dorsum of the tongue after the teeth are cleansed.

ATROPHIC LINGUAL CHANGES

Atrophic lingual changes are of far greater clinical significance than an abnormal coating of the tongue. In evaluating atrophy of the tongue coating, it is necessary to consider whether the atrophy is greater than could be expected on the basis of the patient's age. Lingual atrophy not commensurate with the patient's age is usually secondary to some systemic disease which warrants careful investigation.

Papillary atrophy results from inadequate cellular nutrition, irrespective of the cause, whether it be inadequate food intake, disturbances in tissue enzyme systems or circulatory disturbances. Simple iron deficiency anaemia is frequently responsible for papillary atrophy. When the papillary atrophy is associated with inflammatory disturbances, a nutritional deficiency of the B complex type should be considered. Papillary atrophy is not specific for any one disease. Denture wearing *per se* is not a cause of papillary atrophy. The usual patient of denture wearing age is likely to have some natural atrophy of the tongue coating.

There are several longitudinal folds on the lateral margin of the tongue just lateral to the circumvallate papillae. These are known as the foliate papillae. These papillae may be traumatized by biting or rubbing against the most posterior molar. When these

papillae become irritated, painful and swollen they present many of the characteristics of a malignant growth. No treatment is indicated other than assurance to the patient.

LINGUAL LOCALIZATION OF
SYSTEMIC DISEASE

The lesions of many systemic diseases seem to have a predilection for the tongue. The atrophic lingual changes in the nutritional deficiencies have already been mentioned. The mucous patches and the gumma of syphilis and the lesions of erythema multiforme commonly involve the tongue. Oral tuberculosis lesions may be found on this organ; both along the lateral margins as well as the typical central ulcer of the tongue with the characteristic undermined borders.

The lesions of lichen planus are commonly found on the tongue but on this organ they have a plaque-like or solid geometric form, rather than the linear marking which is so characteristic of these lesions on the cheek. The lesions of lichen planus are usually found only on the dorsum of the tongue. Leukoplakia is found on the dorsum and ventral surface of the tongue. When the former surface is involved the papillary coating is always lacking in the area of the leukoplakia. Drug eruptions, particularly those of the "fixed type" have a predilection for the tongue.

Convenience for the dentist and spectacular results are not sufficient to justify the employment of an antibiotic. Primum non nocere! (First of all, do no harm!)

Before administering antibiotic treatment, the practitioner must answer the following questions: Is the infection sufficiently serious to warrant the use of a drug the efficacy of which for critical situations may be impaired by previous administration to the patient? Can the infection be adequately treated by other available means? Have other appropriate measures been taken? Does the specific nature of the infection indicate that the antibiotic will be effective in eliminating the causative organisms? Does the patient's previous history imply that he will suffer no serious reactions from administration of the antibiotic? Does the method of administration appropriate to the specific situation promise a safe and effective outcome? In many cases, if the dentist should ask himself these questions, his answers would preclude the use of an antibiotic.—From Editorial in *Jour. of A.D.A.*, Feb. 1953.

An expert is a man who decides quickly and is sometimes right.—Elbert Hubbard.

A Short Survey of the Dental Situation in Canada with Special Reference to Alberta and Western Canada

by JOHN CLAY,* I.D.S., D.D.S., F.I.C.D., L.L.D., Calgary, Alberta

THIS is not a complete documented statement on the above named subject nor has it been authorized by a responsible dental body.

It has been prepared by the writer after consultation with leading dentists, to present in a short form the dental situation in Canada. Statements can be verified. The opinions are the writer's own.

At the present time there is a total of just over five thousand dentists registered in the Dominion of Canada. In the four western provinces the number is over fourteen hundred. Of the five dental schools in Canada the one at Edmonton is the only school west of Toronto.

On making enquiries it does not seem possible to obtain satisfactory statistics, but the wastage in dentistry from retirement, death, etc., has been two and one-half per cent in recent years. The number of dentists in Canada has greatly increased since the end of the first World War, so that a large percentage of practitioners are in the younger age group. It would seem reasonable to think that before long the wastage might be over three per cent unless there is still a rapid increase in the number of young graduates. It is probably fairly accurate to assume a practice expectancy of thirty-three years. At the same time the population of Canada is growing at the rate of three hundred and fifty thousand per year and this figure is likely to be exceeded.

If the above is approximately correct it requires about one hundred and fifty new graduates per year to hold our position with the present population. The new population now developing would require, on the same basis of one for twenty-seven hundred, an addi-

tional one hundred and thirty dentists per year. This makes a total need of about two hundred and eighty (280) additional dentists to maintain the present service. Of this number we need forty-five per year for Western Canada for replacement and about forty to take care of growing population at only the same rate of increase as all Canada. A total of about eighty-five new dentists per year is required for the four Western provinces.

In addition we must realize that with Health Services and Preventive Dentistry being stressed there will be a growing demand for service from the large number of people who are now neglecting the care of their teeth.

To meet these conditions there is in Western Canada one school with a normal capacity of graduating not more than thirty dentists. In all Canada the present schools are set up to produce without overcrowding approximately two hundred and two graduates per year. Based on the above figures and the number now enrolled in the five schools it appears that there will be in the next four years a shortage of (67—121—109—111) four hundred and eight (408) dentists in relation to the present population dentist ratio. This would seem to suggest, at a conservative estimate unless conditions change, a deficiency of some one thousand practising dentists in the course of ten years.

It is generally agreed that there is no surplus of dental service at the present time, and the need for this service is constant in good times or bad. There is a greater awareness on the part of the public of the importance of dental care in the general health picture. As the condition gradually becomes more acute, especially

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in rural communities, there will be public demand which cannot be met under the seven or eight years required to plan and build schools, and give a five-year course of training. It seems evident that enlarged school facilities are needed in Western Canada.

In the January 10, 1953 issue of the *Financial Post* there is a report of Canadian universities which gives the following information on dental school enrolment.

<i>Graduating</i>	<i>1953</i>	<i>1954</i>	<i>1955</i>	<i>1956</i>
Dalhousie	14	12	12	12
University of Montreal	56	20	16	20
McGill	33	36	34	34
University of Toronto	75	61	79	72
University of Alberta	35	30	30	30
	213	159	171	169

The maximum number of undergraduate students that will be accepted in a class at these schools is 12—35—60—65—30—202.

There are six factors of importance in what appears to be a rapidly developing serious lack of dental service to the public of Canada.

1. Lack of interest in entering the dental profession.

2. Shortage of dental training facilities.

3. Cost to the state of dental education.

4. Effect of lowering requirements for dental practice.

5. Auxiliary services.

6. Preventive measures.

1. *Lack of interest in entering the dental profession.*—In common with other faculties is a lessening demand for dental training and education. Some of this is due to the attractive scale of earnings obtainable by high school graduates, but there are also special features in the dental situation.

(a) The cost to the student is probably fifteen hundred to two thousand dollars per year.

(b) On graduation it requires about six thousand dollars to modestly equip a small office.

(c) Five years is required for preparation to earn a living.

(d) Dental practice is hard exacting work with no possibility of building beyond the output capacity of one man.

(e) With no pension plan as there is in many types of work, and with large office costs, many young men today feel that the return from the time and money costs is not comparable to other lines of work.

(f) There is a fear that with health insurance schemes such as the very bad British plan, possible or probable in Canada, the freedom of the individual will be affected, and that certainly the financial returns will be markedly reduced.

2. *Shortage of dental training facilities.*—Without marked overcrowding of the present schools, which would give less efficient training, there is not enough school capacity to meet the needs for new graduates.

This is especially true of Western Canada which has a yearly shortage of about fifty-five. The General Faculty Council of the University of Alberta has ruled that at the most no more than thirty-five students may be accepted. The Dental Faculty feels that twenty-seven is a full complement for the two final years.

3. *Cost to the State of Dental Education.*—The dental course is about the most expensive, so that each graduate costs the University a large sum of money over and above his contribution. Who is to meet this expense for Western Canada?

4. *Effect of lowering requirements for dental practice.*—The quality of work and service given by Canadian and American dentists is the highest in the world. Nevertheless it is the unanimous opinion of dental teachers that the average graduate is not too well equipped to give adequate service in the best interests of the public. In fact it is felt that several years of practice are necessary before capable diagnosis can be made and technical ability achieved. A lowering of the present standard as the result of a

shorter less expensive course would turn loose on the public a group of insufficiently trained dentists, a great deal of whose work would be unsatisfactory and harmful.

There are in Canada a number of graduate dentists of Europe among the group known as displaced persons, and the Canadian schools have interviewed many of these. Some of the more capable ones have been accepted for observation, and are being given courses to the limit of school capacity. It has been found that in practically no case have any of these students become capable in theory and in practice to pass the final examinations without at least a year and a half of study and training. Examination of the mouths of Europeans of all classes bears out this statement.

The general licensing of this group would give the public a very bad type of dentistry and destroy any incentive to our own young men to enter an adequate expensive course of instruction. Under such a condition the number of applicants would drop to such an extent that the total number of new dentists would be reduced. It would be exchanging good service for bad.

5. *Auxiliary Services.*—In association with registered dentists who have been unsuccessful, laboratory technicians have registered under the Public Health Act. These do a large amount of work, often not carrying on within the powers given them by the Act. A considerable extension of these offices in the future would increase the amount of dental service to the public, but there is no question as to the very poor quality of work being rendered. Nor is there any question that such a course would be an added deterrent to student registration.

The situation with regard to dental hygienists is different.

I cannot do better than quote from a recent letter from Doctor Don W. Gullett, Secretary of the Canadian Dental Association, who is recognized as a foremost authority in Canada on dental affairs,

"I am very interested in your question respecting dental hygienists. I have no hesitancy in expressing my opinion because I am strongly in favour of doing everything possible to develop dental hygienists as ancillary personnel. In this opinion I have the support of the Council on Dental Education, which was reaffirmed at the recent meeting, together with the support of the Association. I should take time to draft a memorandum for you upon this subject but, hurriedly, I call your attention to the following points:

1. The need for increased personnel is admitted by everyone. The question arises as to how it shall be done. Those who have studied this matter seriously are agreed that the best way is by adopting ancillary personnel. The reason for this attitude is that it is considered safer and cheaper. We sometimes hear it said that hygienists don't do much anyway. Last year we had a statistician work upon this matter and when he was all through, he produced figures which proved that she can save 45% of a dentist's time in a dental office. This is a fact which we cannot afford to ignore. We now have some dental hygienists and I have confidential figures which practically prove this statement respecting saving of time. This gives the dentist more time to perform those services which only he can perform and consequently he can serve more people and should be able to do so at less expense to the public. This is sound logic and I think it will be pretty hard to argue against it.
2. The ideal place for a dental hygienist is in a preventive practice. In such a practice she performs the most time consuming operations. One Toronto dentist said to me the other day after an experience of a year and a half that he would not have believed she could have accomplished so much.
3. The economics of employing dental hygienists must not be compared with the employment of an assistant as so many men do. If a man has a practice, then the hygienist not only pays her own way but contributes to the overhead cost of operating the practice. This is not theory for we have actual proof in practice respecting this point.
4. One of the biggest points in connection with the training of dental hygienists is fitting her into dental public health programs. It was stated to

me within the last week by one government health official that if hygienists were available fifty could be employed immediately in public health activities.

5. In the long run it is considered a much safer expansion of dental personnel than an attempt to greatly increase the number of dentists. Take the point of economic depression during which time hygienists would be getting married or fading out of the picture. We have to face the argument whether or not the dentist is spending his time to the best advantage for service to the public.
6. From what information I have, I think it is extremely doubtful if the federal government will offer assistance for the establishment of increased teaching facilities unless provision is made in the plans for the training of dental hygienists.

Like everything else which is new, there is always lots of opposition. A genius is seldom given due credit during his own life time. Hygienists become expert in performing those duties which the average dentist does not do well. She is an educator in dental health and not many dentists are very successful in this field.

During the last three years the Canadian Dental Association has brought all possible pressure upon authorities but, up to the present time we have only one course established, and that course is only accepting ten applicants per year.

Signed: Don W. Gullett, D.D.S.,
Secretary C.D.A.

Should such a school be planned there seems practically no doubt that American Foundations would help generously with finances. A careful examination has been made of the extensive

dental hygienist set-up in the United States, and after some years of operations the conclusion has been reached by independent charitable foundations that hygienists are of great value to the public at large and the schools worthy of financial support.

6. *Preventive Measures.*—Herein lies perhaps the most important means of relieving the situation.

It is common dental knowledge that a very large reduction in the number of cavities in teeth (particularly in children and adolescents) will occur, if dental hygiene is understood and the knowledge applied. A campaign of education at provincial level, such as is being carried on in Ontario so successfully, would save suffering and teeth, reduce by a great deal the demand for dental services, and pay for itself many times over in reduction of dental costs to the public.

This project would require a Director of Dental Services, registered dentists, dental hygienists and dental nurses, and if set up in a limited district would soon prove its value, and be quickly appreciated by the public. Its records would show its economic soundness.

One other very important means of prevention, which can now be definitely accepted is the treatment of communal water supply with fluorine. There follows a statement by Dr. L. K. Brooks of Calgary, who on request has made an extensive study of the subject. The proven value of its wide application, and the evidence of competent bodies on the question of its lack of harmful effect on general health need no additional comment.

A BRIEF REPORT ON FLUORIDATION OF THE COMMUNAL WATER SUPPLY

by L. K. BROOKS, D.D.S., Calgary, Alberta

Approximately forty-five years ago a New York dentist vacationing in Colorado Springs noticed a marked absence of dental caries or decay in the teeth of the local populace. Being of an inquisitive nature he pursued this

discovery, but it was not until science had developed a method of analyzing "Tracer" elements that fluorine was known to be the causative factor in reducing decay. The next step was to determine how fluorine reduced dental

caries. Fluorine chemically unites with developing enamel to produce a greater resistance to acids, but it is only being built into the enamel pre-natally, and then post-natally until about eight years of age. As an illustration part of the enamel of the first permanent molar is forming in the eighth and ninth foetal months. After this initial reaction, fluorine plays no role whatsoever in caries reduction.

It was a natural development that the suggestion of artificially fluoridating communal water supplies should follow the above discoveries. Only after exhaustive studies proved the complete safety of artificial fluoridation was the first program instituted. The first artificial fluorine program was initiated in Grand Rapids, Michigan, seven years ago. The results have been startling. The decay rate in all children influenced by this program has been 30% to 70% less than the pre-fluorine average depending upon the duration of influence and the age group of the participants. This reduction figure is typical of every area where fluorine in therapeutic concentrations has been received. Before fluoridation programs are instituted, a thorough dental examination is made of all children. Decayed, missing and filled teeth are recorded. Considerable personal history is also noted. Thus a reliable picture of dental decay is established for future comparison.

At the end of 1952, 30,000,000 people in the United States in over 350 cities were receiving therapeutic concentrations of natural or artificial fluorine. Such an outstanding development in Preventive Dentistry deserves more detail, but what more can be said than that fluorine does reduce dental decay appreciably?

Fluorine is not the only answer to the problem of dental caries. Marked reduction could be achieved by a wider knowledge of proper diet and proper oral hygiene, and also partial answers are being found in present research programs dealing with enzymatic inhi-

bition and control of lactobacilli growths.

Of all the foregoing, fluorine in the communal water supply is the most effective and least costly method of reducing dental decay, 10-20 cents per person per year plus the expense of installation.

Three hundred and fifty cities in the United States, four cities in Ontario and one city in Australia have not adopted fluorine with a view to subjecting their peoples to injury. These cities have studied exhaustive mortality rate tables of fluoride free areas. These mortality rates are broken down into causes of death such as cardiac diseases, cancer, cerebral haemorrhage, nephritis, diabetes, tuberculosis, etc. There are exhaustive fracture indexes, growth, height and weight tables, birth, neonatal and maternal death rate tables—of areas where people have consumed fluorine for from ten to forty years, even in stronger dosages than recommended, and in all cases the fluorine areas present identical pictures with the fluorine free areas.

The National Research Division of Medical Sciences, U.S.A., says that "In the accumulated experience there is no evidence that the prolonged ingestion of drinking water in a mean concentration of fluorides below the level causing mottled enamel would have adverse physiological effects,"¹ and an authority in England states, "Further experiments are unnecessary and would only delay the substantial benefits which can be expected from fluoridation of water supplies in this country."

Such conclusive evidence as to the safety and efficacy of fluorine has been gathered that the following organizations have endorsed the fluoridation procedure:

The American Dental Association, the Council of Pharmacy and Chemistry, the American Medical Association, the United States Public Health Service, the American Association of Public Health Dentists, the National Re-

search Council, the Inter-Association Committee on Health and the Council on Foods and Nutrition, all of U.S.A.

It seems unbelievable that with the foregoing health bodies endorsing fluoridation, there should still exist in the minds of many a hostility to this great preventive discovery.

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Impacted Mandibular Third Molar

by WILLIAM W. BRESLIN, D.D.S., Toronto, Ontario

THIS CASE is presented to demonstrate a method of sectioning difficult impacted lower third molars without extensive loss of the alveolar structure.

HISTORY: On February 20, 1945, Mr. N. H., age 27, single, complained of pain in the lower jaws, and was referred to this office for treatment of the impacted molars.

EXAMINATION: Part of the mesial surface of the right lower third molar was visible. The tip of the occlusal extended above the soft tissues. The radiogram revealed the third molar impacted in disto-angular version, mesial surface accessible, distal surface inaccessible, occlusal surface two-thirds covered with osseous structure, (Fig. 1).

TREATMENT: Mandibular block with 1½% monacaine was made on the

right side. An incision was carried distally 10 mm., posterior to the second molar. With a straight chisel, the occlusal bone was removed until two-thirds of the tooth surface was free. With the aid of an impactor, the mesial half of the crown was split along the buccal groove, and removed, (Fig. 2). The distal half of the crown was then sectioned at the gingival, and moved



FIG. 2.—Operative Mesial Crown Removed February 20, 1945.



FIG. 1.—Pre-Operative February 20, 1945.

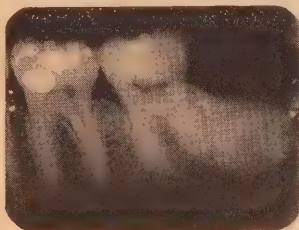


FIG. 3.—Operative Distal Crown Removed February 20, 1945.



FIG. 4.—Post-Operative
February 20, 1945.

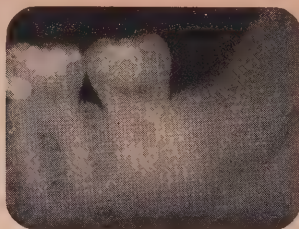


FIG. 5.—Post-Operative
March 7, 1947.

mesially until able to be displaced from the area, (Fig. 3). A curved chisel on the impactor was applied to the buccal of the root, and was dislodged with a hard blow. Elevators were applied buccally and distally till this portion was removed, (Fig. 4). Capsules of amidopyrin, phenacitin and aspirin were prescribed for pain.

CONCLUSION: Patient had some trismus for three days, but very little pain. Swelling was evident, and uneventful healing followed in the course of a few days. Hot saline mouth washes were prescribed. Observation of this case as recently as December 1952 indicated the central still giving service despite the fact that the mouth generally was suffering from caries.

Amalgam*

by H. S. CROSBY, D.D.S., Halifax, Nova Scotia

PRACTICALLY all of us have read or heard at clinics 95% of the available information on amalgam technique. Therefore, my object will be to refresh our memory, and draw attention to some of the errors and bad habits, which we all fall into now and then due to pressure in a busy practice, by reviewing some of the available material on the subject. Short cuts usually prove to be the long way in the end when applied to amalgam technique.

We will start by listing what could be referred to as the Ten Commandments in Amalgam Technique.

1. Do not buy an inferior alloy.
2. Do not under or over triturate.
3. Do not allow the mix to be contaminated by dirt or moisture at any stage of technique. The following are some sources of contamination:

(a) Moisture from condensation on cold alloy.

(b) Moisture from palming alloy or handling with fingers.

(c) Moisture from contact with saliva or water on bracket table.

(d) Moisture carried from touching plugger points with fingers contaminated with saliva, water or even perspiration.

4. Do not add either mercury or alloy at any stage after starting trituration. Have correct proportions to start mix.

5. Do not use unsuitable or poorly adapted matrix. The matrix band must be adapted properly, wedged if necessary, and made rigid with compound in order to withstand packing pressure.

6. Do not continue packing with a mix for more than 2 minutes. (This

*Presented at the Maritime Dental Convention

depends on whether one is using a fast or slow setting alloy.)

7. Do not use sloppy amalgam to start packing, or at any stage of packing.

8. Do not use pluggers that do not fit the cavity. If too large they will not enter the cavity, and if too small they merely punch holes in the amalgam.

9. Do not leave any mercury in the final restoration which can be eliminated by thorough condensation.

10. Do not leave the finished restoration unpolished, and do not burnish. This brings excess mercury to the surface and makes weaker margins.

Most of us have broken a number of these rules at some time or another.

There are a great number of good alloys on the market, in fact it would be difficult to find one with which it would not be possible to place a good restoration, providing the proper technique as laid down by the manufacturer, is followed. Amalgam has been placed second only to gold foil, by a number of writers, and the time required to place a good restoration is seldom greater than required for a poor filling. Faulty technique has been given as the cause of approximately 40% of amalgam failures.

One should choose an alloy approved by the A.D.A., and also suitable to the operator, with regards to speed of setting and working qualities.

A.D.A. specifications for an alloy are as follows:

Silver—65% minimum

Tin—25% minimum

Copper—6% maximum

Zinc—2% maximum

Silver, the chief component, imparts high strength, rapid hardening, high expansion, and high lustre, but is slow to amalgamate, and tarnishes easily in the mouth due to sulphides. Silver unites fairly readily with mercury in definite proportions.

Tin unites readily in all proportions with mercury. It retards setting, increases flow, imparts plasticity,

shrinks, decreases edge strength, and is fairly non-tarnishing.

Copper is used in the alloy because it increases expansion, hardens the amalgam, and lessens the flow. Too much copper results in an amalgam which tarnishes readily, and may sweat after setting.

Zinc unites readily in definite proportions with mercury, expands, hastens setting, lowers strength, increases flow, increases plasticity, and improves colour. Zinc, being most active chemically, when any oxides or sulphides come in contact with the material, combines with them and thus avoids discolouration, since the zinc compounds are colourless.

All non-zinc alloys tarnish readily, and where zinc is present it is very important that no moisture comes in contact with the restoration until condensation is completed. This is because the zinc reacts with water, forming zinc oxide and hydrogen gas, after setting has taken place. A terrifically high pressure may be set up causing delayed expansion and sometimes pain due to pressure.

The four metals are alloyed by the manufacturer with the intention of increasing the desirable properties, and lessening the undesirable. The manufacturers anneal the alloys to prevent ageing but they should be stored in a cool, dry place away from excessive heat.

Discolouration is caused by formation of sulphides from putrefactive decomposition of foods in the mouth on the silver and copper.

Fruit acids, acids of wines and fermenting food, will produce coloured salts with copper.

Discolouration of the tooth itself will not occur to any extent unless breakage or disintegration of the restoration has taken place, and the best way to avoid discolouration of the filling is to thoroughly polish.

There have been a large number of claims of systemic poisoning and allergic reaction, most of which are questioned. Mulling in the palm could give

the dentist mercuric poisoning, or an allergic reaction, besides contaminating the alloy with moisture. Urticaria has been reported a few days after the insertion of an amalgam filling, on the arms, legs, back and face. The reaction increased temporarily on removal of the restoration.

The oral mucous membrane may be discoloured by metallic foreign bodies lodging in the socket following an extraction. These seldom cause any symptoms.

Taste differentiation is said to be lowered with restorations of either gold or amalgam, but this is not sufficient to mean anything to anyone except a professional taster, and is only mentioned as a point of interest.

Where there is a make and break contact between amalgam and gold, slow pitting and disintegration has been observed. This is even more marked in high zinc alloys. We have observed this between both amalgam and gold restoration in contact with clasps of the stainless steel type.

Corrosion may occur in single restoration, or between dissimilar metals. It is quite severe between alloy and gold in dilute salt solution or artificial saliva. To prevent corrosion, pitting, etc., one should do a thorough job of amalgamation and condensation, and after twenty-four hours a good polish. In addition one should contour, so as to give ease of cleaning, avoid dissimilar metals if possible, and have complete seal of margins.

Matrix bands are necessary for all compound restorations and should possess the following qualities:

1. Easy to adapt and fix on the tooth.
2. Provision for contouring.
3. Rigidity to withstand packing pressure.
4. Easy removal.

The two types of bands are:

1. Commercial type of retainer and band.
2. Those made from band material using solder, special pliers, ligatures, compound, and wedges. A great many

writers think that too much dependence is placed on the commercial retainers.

If necessary for rigidity and fit, the band should be wedged at the gingival and supported with compound. Separators such as Perry, Ferrier, and True types are often useful in conjunction with the band.

Care should be taken to avoid injury to the soft tissues and separation is frequently necessary to compensate for the thickness of the band. The band should be contoured to avoid too small a contact area and should leave room for slight overpacking on buccal and lingual.

Contact points and contours must protect the gingiva and one should endeavour to obtain a contact, that is a V shaped interproximal space, gradually widening out towards the buccal and lingual, the base of the interproximal triangle being at the alveolar border, and the apex at the contact. The contact between posterior is usually more than a point in that it extends $1\frac{1}{2}$ -2mm. from buccal to lingual.

Flow is greatly reduced by avoiding heavy stresses in unprotected areas, narrow contacts and thin margins.

In class 5 cavities, a band is used with an opening cut through which the amalgam is packed in.

Separation is necessary for the following reasons:

1. Proper examination.
2. To correct previous drifting due to wear or caries.
3. To gain access with minimum outline form.
4. For proper restoration of contours.
5. For polishing interproximal surfaces.
6. For removal of foreign bodies.

Trituration is accomplished by use of mortar and pestle, finger stalls, or rubber dams, mechanical mixers, or a combination of these methods.

The mortar and pestle is probably the most used, and is made of glass or steel, with either smooth or ground surfaces. The one recommended by

most writers is the one of ground glass without the raised centre, and should be conditioned frequently with FFF carborundum powder. If several are used they should be marked in order that the same mortar and pestle are always used together.

Dispensers.—Of the two types of dispensers, the balance type and the automatic release, the balance is favoured by most writers who advise weighing and storing in capsules, using one colour for the alloy and another for the mercury.

In triturating the amalgam it is important to follow the manufacturer's directions, and not attempt any short cuts.

Use the pencil grip on the pestle and have the mortar placed on the cabinet, not held loosely in the other hand. The object is to rub the particles together, not grind them. Use about 2 pounds pressure for one minute and a quarter, depending on the alloy used.

Proper trituration will not require mulling afterwards, but if done, use clean rubber dam or a clean rubber finger stall. The amalgam should have a silvery sheen when trituration is complete. One should endeavour to stop immediately when amalgamation is complete, as both over and under amalgamation have an adverse effect on the final restoration. Under amalgamation results in corrosion. Over trituration, too heavy pressure during trituration, and kneading too long cause shrinkage.

Trituration below 68 degrees F, short kneading, palming with resulting moisture, or moisture from other sources, light packing, and waiting too long before packing will result in expansion of the finished restoration. It is also important to avoid contamination from particles of old amalgam being retained in cracks or flaws of mortar and pestle, and on the points of serrated pluggers.

The mechanical mixer has the advantages of giving a uniform mix, and being ideal for multiple mixes, since no time need be lost and the assistant

can have a fresh mix ready as fast as one can pack the alloy. The plastic capsule is considered better than the steel. The capsules must be kept free from old set amalgam.

After trituration the amalgam is placed in a squeeze cloth and as much mercury as can be expressed with finger pressure is removed. (Do not touch with fingers and do not use pliers.) The amalgam now has a dry crumbly appearance, but still contains a slight excess of mercury, which should be removed by thorough condensation. (We are now advised not to start with a soft mix, and also not to overpack with an extra dry mix.)

Once trituration is completed it should be packed in the dry cavity as rapidly as possible, and after two minutes discard the mix being used, and make a fresh mix with as little time loss as possible. (The time given here of course, depends on the alloy used, that is whether fast or slow setting.)

The manufacturers recommend expressing the mercury from part of the mix, and packing, then repeating this with the rest of the mix, but personally I prefer expressing it from the whole mix and discarding for a new mix, any amalgam not packed in two minutes.

The first piece is placed in the cavity and condensed into all parts of the cavity with a plugger which covers as much of the area being packed as possible. Too large a plugger will not enter the cavity and using one too small will punch holes in the material, or else merely push it from one part of the cavity to another. Make certain that the amalgam is condensed into all line angles and against all margins of the cavity.

Use a steady thrust and a wobbling motion, making a compact mass and forcing the excess mercury to the surface, where it is removed, and packing continued. This is carried on until the cavity is overfull. The packing must be done quickly to avoid disturbing crystallization, and one should endeavour to obtain a restoration with the same condensation throughout.

Any poorly packed areas cause uneven expansion. One should avoid also placing too much material in the cavity each time.

Mulling partially set amalgam, to get back to a workable state, breaks up crystalline structure and causes greater initial contraction, and poor resistance to flow. We must not add mercury to make amalgam workable either. Use a fresh mix. Some writers recommend rubber faced packers.

Mechanical Condensers.—There are a number of different types such as the one used on the handpiece, the Hollenback, and the vibrator type. In using a mechanical condenser I find that I am able to remove more of the excess mercury, and obtain a better condensed filling, than with hand pluggers. Although tests have been made which showed that there was little if any difference, providing sufficient pressure was used with the hand pluggers. Special points to fit class 2, and class 5 cavities, and disto-lingual grooves, will be found very helpful.

Whether the matrix band is removed immediately after packing is completely depends on alloy used, how thorough condensation was carried out, and size and shape of restoration. Remove band towards buccal or lingual first carving occlusal. Try to cultivate a bite memory as well as a cavity memory. Make certain there are no overlaps, and in testing bite avoid pressure. The patient should be warned not to chew on the area for some hours.

Finishing.—The occlusal is finished with round burs, plug finishing burs, stones and discs, followed with brushes and rubber cups, plus pumice, which can be flavoured with tooth paste and have denture powder added as a binder.

Always keep wet to avoid overheating. Between teeth use strips coated with first abrasive and later polish. Finally use a felt wheel and polish.

Polish used can be tin oxide, zinc oxide, whiting or some of the commercial products placed on the market for polishing amalgam.

Do not reproduce deep grooves unless there is considerable depth to the cavity.

Polishing may not be successful if surface is rough or too much mercury is left in the restoration.

Amalgam is the most frequently used filling material and a lower percentage of failures is claimed for it than any other material except gold foil. Amalgams gain strength slowly and many fractures occur shortly after completion. After eight hours 85% of the strength is present. Patients should be warned to avoid pressure for eight hours.

You should start with proper proportions as excess mercury in the mix ends up with an excess in final restoration, regardless of how well condensed.

Amalgam is indicated in all but the six anteriors, and some operators use it freely here in areas which do not show. Amalgam is used where there is enough tooth structure to support the finished filling, while a gold inlay is preferred where the restoration must contribute to support of tooth. There are many cases where a gold inlay requires a greater loss of tooth structure than the amalgam.

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Literature Supplied by L. D. Caulk & Co.
Literature Supplied by Baker & Co.

A smile cannot be bought, begged, borrowed or stolen; and it has no earthly value until it is given.—Chinese Proverb.

The secret of being miserable is to have leisure to bother about whether you are happy or not.—G. Bernard Shaw,

The Forum

PENICILLIN THERAPY IN DENTAL PRACTICE

by B. COHEN, B.D.S. (Rand.), H.D.D.R.C.S., (Edin.), M.S.D. (Northwestern)
Oral and Dental Hospital, University of the Witwatersrand, Johannesburg

Condensed from *Jour. of D. Assoc. of S. Africa*, Jan. 1953

The application of antibiotics to the treatment of oral diseases is a matter of obvious importance to dental practitioners. Penicillin, the forerunner of so many imitators, remains the most remarkable member of this new therapeutic species. Penicillin offers to patient and practitioner a remedy of such safety and effectiveness that its value cannot be ignored.

Acute infections of the oral soft tissues are, as a rule, rapidly amenable to treatment instituted early and as pain is usually a prominent symptom patients seldom delay in seeking relief. "Vincent's Infection" is a well-defined clinical entity that can be diagnosed with certainty. The local administration of penicillin in the form of troches or lozenges can confidently be expected to relieve pain promptly. It is important that dosage should be adequate to ensure that relief is achieved. As a general rule the administration of 20,000 unit troches at two-hourly intervals for twenty-four hours will more than suffice to overcome the local infection; when considerable systemic effects are also present however, (e.g., elevated body temperature and feverishness), it is as well to bolster the body's defences by hypodermic administration so that generalized toxæmia can be rapidly abated. A suggested dosage in this instance is the intramuscular injection of 500,000 units of sodium penicillin combined with 300,000 units of a more slowly absorbed preparation of procaine peni-

cillin; this to be followed twelve hours later by a further 300,000 units of procaine penicillin.

All that penicillin can accomplish is eradication of the acute infection, but any underlying factor which facilitated infection originally may still exist. Thus, for example, such areas of latent infection as atrophied papillae, deep pockets, or stagnant areas around malposed teeth demand attention if recurrent infection is to be avoided.

The spread of infection from a dental source to extra-oral soft tissues is not uncommon. Infection spreading in this manner is extremely dangerous. The rapidity with which cellulitis can progress has only to be seen to be feared and, since either Ludwig's angina or cavernous sinus thrombosis can develop, a fatal termination may ensue if prompt and effective measures are not instituted. Penicillin dosage should be thought of in terms of millions of units, not thousands. The niggardly transference of the drug from the bloodstream to cerebrospinal fluid must be overcome by the use of intrathecal administration as soon as the possibility of cerebral involvement is anticipated and, above all, it must be remembered that there is, to all intents and purposes, no ceiling dose of penicillin. Peak concentrations are called for, without restraint and without delay, and in order to ensure that they are maintained the use of intravenous drip administration is likely to

be advantageous. Needless to say, such urgent therapy is not called for in the treatment of early cellulitis of the type most frequently seen in dental practice, nor is it likely to become necessary if treatment is promptly and appropriately accorded. In most cases a preliminary loading dose of 500,000 units crystalline penicillin together with 300,000 procaine penicillin can be adequately followed by procaine penicillin alone twelve hours later, and a rapid subsidence of symptoms can usually be expected.

When used in the treatment of osteomyelitis penicillin does more than merely check the local spread of the infective process. In addition, it affords protection against blood-borne dissemination of infection, and it is by virtue of this effect that radical surgery involving infected areas is made feasible.

A condition of localized bone infection, commonly referred to as "dry socket," has proved more amenable to penicillin therapy than to any of a multitude of remedies previously advocated.

To relieve this condition, proprietary preparations known as penicillin cones have been produced, and have been recommended for insertion into dry sockets as well as into post-extraction sockets as a prophylactic measure. They do not appear to meet requirements in either regard, and in neither respect are they as effective as the hypodermic administration of procaine penicillin. Cones do no more than superficially sterilize the coagulum without affecting organisms which have spread into bone. In a subsequent paper by Fleming and Fish evidence is presented to show that the use of cones in extraction sockets as a prophylactic measure is actually harmful in that they may inhibit proper clot formation.

One of the most successful dental uses of penicillin concerns its application to infection involving tooth and bone in root canal therapy. The use of antibiotics has proved the most suc-

cessful therapeutic measure so far evolved.

Prophylaxis with penicillin probably exceeds all its other uses in ultimate value, for in this respect its effects are much more than palliative.

The condition of subacute bacterial endocarditis exemplifies the dangers inherent in dental surgery exerting an effect remote from the mouth. The disease is insidious in its onset and development so that its existence is sometimes unsuspected.

The release of mouth organisms into the blood stream can be offset by penicillin therapy designed to provide an effective antibacterial level of the antibiotic in the circulation.

The prophylactic use of penicillin for preventing the dissemination of sepsis via the bloodstream has radically altered the principles of surgery. Where once it was established teaching to avoid surgery in acutely infected regions, the advent of penicillin has enabled the inherent hazards of such action to be confronted with impunity.

As Fish has stated, "Pre-medication with penicillin is, in the case of impacted or partly erupted teeth, an essential of modern operative technique." To scorn the protection of penicillin in any oral surgical procedure which entails ingress into bone or the lifting of extensive mucosal flaps is to violate the patient's best interests.

The treatment of jaw fractures has been improved immeasurably by the development of antibiotics. The chief prophylactic uses of penicillin from a dental viewpoint are, then, to prevent the development of bacteriaemia after any minor oral surgery, to permit surgical intervention in areas of acute inflammation, or suppuration, and to prevent infection gaining a foothold in bone exposed by trauma or surgical procedures.

The greatest danger associated with the use of penicillin is failure to appreciate the new concept of therapeutics which it involves. The notion that large doses are dangerous, while

applicable to many other drugs used therapeutically, must be replaced by a realization that overdosage of penicillin is to be avoided only because it is economically wasteful. The real danger lies in injudicious usage which may lead to the development of penicillin-resistant organisms. Already the spectrum of penicillin's antibacterial effect appears to be narrowing. There are numerous reports published concerning strains of staphylococci, in particular, which are penicillin-resistant. It is strongly suspected that this de-

velopment is attributable to inadequate administration of the drug. Small and intermittent dosages of penicillin sublethal to bacteria, may produce immune strains. The value of penicillin as an anti-bacterial agent need not be emphasized. To squander this gift would be nothing short of criminal. It is imperative that nothing be done to jeopardize its effectiveness. Therefore, (1) penicillin should never be used indiscriminately; (2) it should be prescribed only in adequate doses for an adequate duration of time.

SOLITARY HERPETIC LESIONS

by JAMES L. SCALES, D.D.S., Tuskegee, Ala.

Condensed from *Jour. of Oral Surgery*, Jan. 1953

Treatment—Everett performed clinical studies to determine the effectiveness of aureomycin in therapy of herpes simplex labials and recurrent oral aphthae. He found that prophylactic use of 5 per cent aureomycin ointment reduced the incidence of herpes labialis by more than 75 per cent. The treatment of existing lesions of herpes labialis with aureomycin ointment by the oral administration of 25 aureomycin troches, 15 mg. each, given at two hour intervals over a period of three days resulted in a 39.9 per cent reduction in the length of duration of the lesions of recurrent oral aphthae. The best response to treatment of these conditions was noted when medication started within the first 24 hours after eruption.

Because pain is the chief feature, the treatment is directed toward protecting the free nerve endings just under

the superficial ulcer. Perhaps the most popular method is coagulation of the ulcer surface with a cauterizing agent. As pointed out in discussing the treatment of the stomatitides, the use of caustic agents is to be deplored because of their destructive effect on the surrounding normal tissue. The sulphonamides, antibiotics or viricides are of no value.

A preferred treatment of the solitary herpetic ulcer is the use of compound benzoin tincture. The area is dried and the benzoin applied. The alcohol evaporates to leave an adhesive, pliant protective coating. This will not injure the adjacent tissue. The patient can be given a prescription for compound benzoin tincture with directions to apply as needed for the relief of pain.

It must be emphasized that the preceding therapy is only palliative and seldom hastens the healing.

"Even if all the Utopian dreams of the Socialists were realized, and every one was fed to his heart's content in this universal labour State, yet should I for all that prefer to eat in peace the potatoes planted by my hand and to be clothed with the skins of the animals I reared, and therewith remain free, than to fare sumptuously in the slavery of the labour State."—Bishop Von Ketteler of Mainz in the 19th century, per *Jour. Am. College of Dentists*.

LET US SEEK A SYNONYM*Editorial in Dental Record, Jan., 1953*

In a recent broadcast debate between a British politician and an American politician, the American delivered the last words, "In a democracy where everyone is free, none are equal; in a democracy where all are equal, none are free." These words form a universal truth which cannot be refuted. Every man can adapt them to his own field of endeavour. Every dentist will associate them with dentistry, for there is no other occupational field in Britain to which the words are more truly applicable at present. Under the Health Act all dentists are equal; therefore none are free. At least that is apparently the desire of both Governmental parties under the present despotic annihilation of what is best in the dental profession.

We have, like all other professions, a few black sheep within our ranks, who are definitely anti-social and do not conform to the general pattern of dentists whose first consideration is for the welfare of their patients. The Government has made all dentists equal; it has also made all patients equal. The Dental Estimates Boards have not attempted to correct this iniquitous state of affairs. To them all patients are most definitely equal; the nonagenarian with the young adult; the orally hygienic with the orally careless.

It is easier for Boards in their fallibility, or self-termed infallibility, to say, "This we permit and that we do not permit, irrespective of the age,

social requirements or personal habits of the patients. That is our ruling. All patients are equal." It is also easier to say "Such treatment has not proved sound in the hands of a number of dentists, therefore it cannot be permitted to any. All dentists are equal."

Let us not levy the charge of vote-catching at all politicians; let us refrain from condemning all civil servants for taking the easy path. All politicians are not equal; all civil servants are not equal. The honest and free among their ranks know that it is criminal to dub all dentists as equal. Let us help them out of their self-created dilemma; let us drop the term "Grant-in-Aid" and supply a synonym. Politicians and bureaucrats have uncategorically condemned "Grant-in-Aid" and yet know it to be the only solution to the existing dental problem, but their dignity is affected. "Grant-in-Aid" by any other name would smell as sweet to dentists and sweeter still to bureaucrats; it would not overcome every difficulty, human nature being what it is, but it would begin on a sound basis by recognizing with our American politician that all dentists are not equal and that in a country in which they are made equal, they are not free, nor are they happy or efficient. And it is our duty to our patients that we should be free and efficient. Let us therefore be magnanimous and find a synonym for "Grant-in-Aid." "Romeo, Romeo. Wherefore art thou, Romeo?"

COSTS OF DENTAL EDUCATION*Editorial in Jour. Ohio State D. Assoc.*

At the request of the Council on Dental Education the United States Public Health Service made a study of the financing of the 40 American Dental Schools in full operation during 1949-50. The report of that survey is of interest to every dentist.

There are 3,430 dental teachers, only 708 of whom devote their entire time to teaching dental students. It costs about \$11,000,000 per annum to pay for this instruction. In addition four and one-half million dollars is needed for administration, operation, maintenance

and libraries. The total cost of dental education in the forty schools is \$15,667,434 for the year. Since this is not enough to meet the present demands on dental schools the sources of this money should be considered. The basic operating income of all schools comes from tuition and fees, gifts and grants, endowments, state and city appropriations and general university funds, regional organizations and miscellaneous transfers. The income from clinics supplies 25 per cent of the total basic operating income, 21 per cent in publicly supported schools and 28 per cent in private schools. State and city appropriations and general university funds supplied about 35 per cent of the income with only about 5 per cent coming from gifts and endowments. Students fees and tuition pay for only one-third of the basic operating expense. These percentages vary between public and private schools.

The survey indicates that schools of dentistry need improved physical facilities, additional faculty and increased operating funds. The need for more dentists in Ohio, as throughout the nation, is shown by Dr. Postle's discussion of the problem. It is estimated that the average school needs \$1.4 million for construction and equipment and that about \$205,000 additional to present funds is needed annually for operating needs (salaries, supplies, equipment and overhead). This money

must come from one, or all, of the three major sources (tuition, state and university grants, clinic income), or substantial increases in endowment will be necessary. Tuition fees in some schools have already reached the limit of economic feasibility. There are definite limits in that area. Clinic fees must be kept at a reasonable level or the very source of teaching material will be lost. School clinics are operated for educational purposes and the time is long past when they should be major sources of school income. The only remaining sources are governmental agencies and endowments. It has been the American way to depend on endowments from private sources and foundations but changes in our economy have reduced available funds from those sources.

To what extent should local, state, and federal government aid dental education? In Ohio, the state has been generous in supplying physical facilities and operating funds. Do you want that continued and expanded? Do you prefer to have this money reallocated through federal activities? How is dental education to be continued and expanded? Yes, it is your problem as much as that of the prospective dental student. You only paid a portion of the cost of your dental education. Who is to pay the large share of the education of your future colleagues or your own children?

SIGNIFICANCE OF PULP STONES

From Jour. of Oral Surgery

Q.—Are pulp stones an indication for extraction of the involved tooth?

—E.R.G., Kansas City, Mo.

A.—It is generally accepted that the presence of calcified areas within pulp chambers are not an indication of

pathologic change requiring surgery. Rarely, these teeth become symptomatic of a degenerative pulpitis and are then removed. Roentgenographic evidence of pulp stones in an otherwise normal tooth is not cause for alarm.

"Soak the rich" soon becomes "soaking ourselves" because there are not enough rich folks to support an extravagant and spendthrift government and we have no legal protection against exorbitant taxation.—President of Wheaton College.



DOMINION SQUARE MONTREAL

(The Sun Life Building and St. James Cathedral)
(One Block from Convention Headquarters)

JOINT MEETING

THE CANADIAN DENTAL ASSOCIATION THE ANNUAL MONTREAL FALL CLINIC

Under the Auspices of

THE COLLEGE OF DENTAL SURGEONS, P.Q.

OCTOBER 18, 19, 20, 21, 1953

PLAN NOW TO ATTEND

Cheques or money order for registration fee of \$15.00 should be made payable to The Montreal Dental Club and mailed to Dr. D. B. Ward, Joint Convention Committee Secretary, Suite 309, 1414 Drummond Street, Montreal, Que.

"When we build, let us think that we build for ever. Let it not be for present delight, for present use alone. Let it be such work that our dependents will thank us. Let us think, as we lay stone on stone, that a time is to come when these stones shall be held sacred because our hands have touched them, and men shall say as they look on the labour and the substance they have wrought, 'See this our fathers did'".

PROGRAM OUTLINED

SATURDAY, OCTOBER 17, 1953

Football Game—

McGill University vs University of Western Ontario. Make own reservations — Athletic Office, McGill University, Mtl.

SUNDAY, OCTOBER 18, 1953

Mount Royal Hotel—

Registration
Musicale

MONDAY, OCTOBER 19, 1953

Mount Royal Hotel—

Registration
Table Clinics
Exhibits
Canadian Dental Association—Luncheon
Annual Meeting

Class Reunions—

Essays
(McGill, University of Montreal.
Class Secretaries please arrange)

TUESDAY, OCTOBER 20, 1953

Mount Royal Hotel—

Registration
Essay
Atomic Energy Program
Exhibits

Universite de Montreal—

Group Clinics
Clinical "At Home"—Faculty of Dentistry
Group Clinics
Table Clinics
Scientific Sessions

Windsor Hotel—

President's Dinner Dance—Sponsored by The College of Dental Surgeons, Province of Quebec.

WEDNESDAY, OCTOBER 21, 1953

Mount Royal Hotel—

Exhibits
Essays
Group Clinics
Montreal Dental Club Luncheon

LADIES' PROGRAM

Coffee Party
Tea at Chalet, Mount Royal
Luncheon
Dance

CANADIAN DENTAL NURSES' AND ASSISTANTS' ASSOCIATION

Mount Royal Hotel—
October 18-October 21—

Seventh Annual Meeting in conjunction with The Montreal Dental Nurses' and Assistants' Association Nineteenth Annual Convention.

For Information—Miss Lois Winters,
Convention Convener,
c/o Dr. J. C. Flanagan,
1224 St. Catherine St.
Montreal, Que.

"The population of the world is increasing steadily at the rate of 20,000,000 persons per year without any corresponding increase in available tillable land. Consequently the provision of food for these additional millions is one of the gravest problems facing world leaders today."

ANNOUNCEMENTS

● **WESTERN CANADA DENTAL SOCIETY:**—Jasper Park Lodge, Alberta, June 14-18. Theme—"Dentistry for the General Practitioner". The executive is going all out to make this a most interesting and colourful convention.

● **DENTAL TREATMENT OF CANADIAN FORCES BY CIVILIAN PRACTITIONERS**—The Department of National Defence will not assume financial responsibility for dental treatment provided to personnel of the Canadian Forces by civilian practitioners:

Unless (1) Prior authority has been secured over the signature of a Command Dental Officer;

Or (2) The treatment is of an emergency nature for the relief of pain or for the repair of a broken denture.

In all cases, detailed amounts must be submitted in accordance with regulations.

● Matters relating to the **C.D.A. PENSION-ASSURANCE PLAN** should be addressed to the Administrator, Mr. E. L. R. Williamson, Pgst Office Box 70, Brockville, Ont.

● **AMERICAN DENTAL SOCIETY OF EUROPE**, Annual Meeting in Bergen, Norway. August 4-7, 1953, Hon. Secretary, F. Douglas Derrick, 140 Park Lane, London, W.1.

● The **MARITIME DENTAL CONVENTION** is to be held at Keltic Lodge, Ingonish Beach, Sept. 3-5, 1953.

● **AMERICAN DENTAL ASSOCIATION CONVENTION** at Cleveland, Ohio, September 28 to October 1.

● **10th ANNIVERSARY MEETING OF THE AMERICAN INSTITUTE OF DENTAL MEDICINE**, Palm Springs, California, October 25-29. For information apply to the Executive Secretary, 2240 Channing Way, Berkeley 4, California.

● **POSTGRADUATE TRAINING IN PERIODONTIA AND ORAL MEDICINE**, NEW YORK UNIVERSITY COLLEGE OF DENTISTRY announces its full-time course in Periodontia and Oral Medicine for one academic year, September 21, 1953 to May 21, 1954, leading to a certificate. Half-time two year courses are also given.

Apply to Secretary, Postgraduate Division, New York University College of Dentistry, 209 East 23rd Street, New York 10, N.Y.

● **POSTGRADUATE TRAINING IN PRACTICE MANAGEMENT**, NEW YORK UNIVERSITY COLLEGE OF DENTISTRY:—This course teaches the application of the attitudes and procedures which develop confidence of patients necessary to build and maintain sound dental practice. Emphasis is placed upon consultation methods to relieve the patient's fears; education to create understanding of the need for treatment; and motivation to show the value and importance of dental care based on the patient's individual dental, medical and socio-economic needs.

June 8 to 12, 1953, 1-4 p.m. and 6-9 p.m. Tuition: \$75.00. Books: \$15.00. Apply, Secretary, Postgraduate Division, New York University College of Dentistry, 209 East 23rd Street, New York 10, N.Y.

● **TUFTS COLLEGE DENTAL SCHOOL ANNOUNCES THREE COURSES IN OCCLUSO-REHABILITATION** by Dr. Louis Alexander Cohn. Lecture and Seminar Course September 21-25. Tuition \$250. Special Participation Course, seven months beginning October 9, 1953. Enrolment limited to 12. Tuition \$1000.00. Graduate Course leading to the M.S. or M.S.D. Degree. This is a full-time 18-month course.

Apply to Director of Graduate and Postgraduate Studies, Tufts College Dental School, 136 Harrison Avenue, Boston 11, Mass.

● **UNIVERSITY OF TORONTO DENTAL ALUMNI ASSOCIATION** Annual Meeting, Dinner and Dance, Friday, October 16, Homecoming week-end.

● **EASTERN ONTARIO DENTAL ASSOCIATION CONVENTION** will be held at Chateau Laurier Hotel, Ottawa, September 20, 21, 22.



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Editorial

PERSONAL INTEREST

John Bunyan wrote almost three centuries ago: "Physicians get neither name nor fame by pricking of wheals or picking out thistles or by laying of plasters to the scratch of a pin; every old woman can do this. But if they would have a name and a fame, if they will have it quickly, they must do some great and desperate cures. Let them fetch one to life that was dead; let them recover one that was born blind to see or let them give ripe wits to a fool—these are notable cures and he that can do thus, if he doth thus first, he shall have the name and fame he deserves—he may lie a-bed till noon."

The ambition of most dentists is not to lie a-bed till noon but most men would welcome name and fame. However, this is not to be achieved in dentistry by fetching one to life that was dead, or to recover one who was born blind. As far as public popularity is concerned, name and fame can be obtained to a considerable degree by placing first things first. The accompanying cartoon entitled "What Patients Want Most" is worth a careful study since it expresses graphically what matters most in building up a successful dental practice. A prominent business house asserts that what brings customers back is something "extra," that shopping conversation may be that extra or friendliness may be the extra. That great dentist, Dr. C. N. Johnson, born in Canada and for many years editor of the Journal of the American Dental Association, wrote in 1908: "I often wonder why people do not make a wider use of the marvellous power there is in kindness. It is the greatest lever to move the hearts of men that the world has ever known—greater far than anything that mere ingenuity can devise or subtly suggest. Kindness is the king-pin of success in life; it is the prime factor in overcoming friction and making the human machinery run smoothly. The king upon the throne has no more privilege in this respect than the digger of ditches, and there is no other factor in human life so well calculated to destroy the distinction of caste as this. Kindness makes the world kin. It breaks

down the barriers of distrust, deceit, envy, jealousy, hate, and all their miserable train."

A business executive has said, "that the dentist does not have to apologize to anyone, but in dealing with his patients he could well take lessons from his horse-and-buggy ancestors." We have made wonderful scientific progress but have given too little attention to patient-dentist relations. We must still remember that our patients are human beings and that they should sense clearly that we are more interested in them than in the cash register. Fees should be set on a business-like basis and believed to be right and just by the dentist. Patients must be taught that the money he pays is a worth-while investment. Fee discussions should be commonplace. Estimates should be given before commencing extensive treatment. We should establish a more continuous and sympathetic contact with our patients. What better way than an efficient recall system! Take time to answer questions. Don't feel that the patient is too dumb to understand.

There would be fewer human-relation failures if we would train our assistants to greet all patients with a smile as honoured guests; call them by name, assist them on with their coats. "A smile is God's gift to the receptionist." Perhaps there might be a writing desk with stationery in the reception room for patients' use. A suggestion box for patients' comments has been recommended. It might help.

A Chinese proverb says, "A man without a smiling face must not open shop." So the dentist too should meet his patients with a smile calling them by name without fail. The dentist must make friends of his patients. A translation from Omar Khayyâm reads: "He who has a thousand friends has not one friend to spare and he who has one enemy will meet him everywhere."

Emerson said, "If a man write a better book, preach a better sermon or make a better mouse-trap than his neighbour, tho' he build his house in the woods, the world will make a beaten path to his door." This may be true of the book and the sermon but most men would feel like getting out and selling the mouse-trap.

It is not necessarily the dentist who is the superb technician, who can insert a better bridge or inlay than his confrères, who stands out as the successful dentist. It is the one who takes a personal interest in his patients. He will not tell a patient with a toothache that he can't see him for two weeks.

One might go on to some length in enumerating the details as to how personal interest might best be shown. However, it can be summed up in one word "Character." Character is power. The character of Socrates was mightier than the hemlock, and banished the fear and sting of death. It is said of Lord Chatham that those who listened to him felt that there was something finer in the man than anything which he said. "It is a grander thing to be nobly remembered than to be nobly born." Horace Greeley on his death bed exclaimed: "Fame is vapour, popularity an accident, riches take wings, those who cheer today will curse tomorrow, only one thing endures—character."

To be most effective, personal interest will be shown to patients not because it is considered good business practice, but because our character demands this of us. There are many men in dentistry who would rather be right than be premier. Patients know that they can trust such men; that teeth will not be extracted unless that is the right thing to do; that they will not wake up some day to find that they have a hopeless periodontal condition though they have sought dental treatment regularly; that their dentist has neglected their children for more remunerative service; that a prosthetic appliance has been inserted which the dentist would not consider for adaptation to his own mouth. All of this is a perversion of our knowledge to unworthy and tragic ends. They just know that their dentist will do the best he knows how for them. Thackeray says, "Nature

What Patients Want Most



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has written a letter of credit upon some men's faces which is honoured wherever presented. You cannot help trusting such men; their very presence gives confidence. There is a 'promise to pay' in their very faces which gives confidence and you prefer it to another man's endorsement."

Of course the greatest rule for character which has come down through the ages is the Golden Rule—the ideal for dentist-patient relations, the rule which is set up as a guide not only in religious organizations but in lodges and service clubs as well—"To do unto others as you would have them do unto you." A den-

tist may have the finest office, the best location, superb equipment, all that money can buy, and yet without character he will be a disappointment to himself and his friends. Some writer has well said that David of the throne we cannot always recall with pleasure, but David of the Psalms we never forget.

"Virtue alone out-builds the pyramids;
Her monuments shall last when Egypt's fall."

M. H. G.

BOOK REVIEWS

The Scientifically Designed Partial Veneer or Three-Quarter Crown by Walter E. Jones, D.D.S., Published by the Burgess Publishing Co., Minneapolis, Minnesota, 1952. Price \$3.00

This is a remarkable book—or one might say booklet, because it consists of only sixty-one pages including the bibliography and deals with only one type of restoration—albeit rather thoroughly—the three-quarter gold inlay. The author has made a thorough study of the three-quarter crown construction and not only describes his cavity preparation but discusses the practical physics involved, and is very convincing. It is hard to agree with him that this is the only type of three-quarter that should be used—there are many patients who do not like the amount of gold to show which the author's technique requires, and while some of the strength of the preparation is sacrificed many people, especially ladies, are wearing bridges supported by "wrong" preparations, and are finding them satisfactory. However, where a reasonable amount of metal may be shown and especially on bicuspid and molars, the technique described is very sound.

I would have liked to have seen the author go into more practical detail in discussing the cementation of inlays and also I am sorry an operator of such skill and insight has limited his book to such a small field. I feel he has much more to offer the profession.

KENNETH M. JOHNSON

Dental Surgery & Pathology by J. E. Colyer, K.B.E., LL.D., F.R.C.S., F.D.S., and Evelyn Sprawson, M.D., D.Sc., M.R.C.S., L.R.C.P., F.D.S. 1,115 Pages. Illustrations, 1,105. Published by Butterworth & Co. (Canada) Ltd., 1367 Danforth Ave., Toronto 6, Ontario. Price \$13.50.

For many years this book has been a well recognized text and now appears in the ninth

edition. The different aspects of dental pathology are covered with thoroughness.

The new edition includes more than 30 additional illustrations and the text has been revised and expanded to incorporate new material dealing with recent developments notably in the sections on pregnancy, gingivitis and tumours, osteomyelitis, the treatment of the fractured incisors of children, the healing of extraction wounds, the effects of drugs on the gums and oral mucous membranes and the external pinning of fractured mandibles. A new chapter on the uses of penicillin, the newer antibiotics and the sulphonamides in dentistry is included. DON W. GULLET

Accepted Dental Remedies 1953 Edition

208 Pages. Published by the American Dental Association, 222 East Superior St., Chicago, Illinois, Price \$1.50.

This useful publication for the practising dentist is much the same as the 1952 Edition. The following inclusions of interest to the dentist are discussions on the use of curare in general anaesthesia in dentistry, the role of terramycin in the treatment of dental infections, the wider use of fluorides, and soap and hexachlorophene preparations. Arterenol (nor-epinephrine) is a new drug included as a vaso-constrictor.

The deletions include liquefied phenol as a chemical disinfectant for root canals, iodoform (5-10%) gauze packs, and the discussion on the methods of administering calcium salts.

In the section on the Symptoms and Treatment of Acute Poisoning, "bromides" has been deleted.

G. H. W. LUCAS, PH.D.
PROFESSOR OF PHARMACOLOGY,
UNIV. OF TORONTO

Intravenous Anaesthesia in Dentistry

by S. L. Drummond-Jackson, L.D.S., R.C.S. (Edinburgh) Published by Staples Press Limited, London, England. 152 Pages. Price 25/5.

The text describes the use of intravenous anaesthesia in a dental practice for both surgery and operative procedures from the year 1933, until 1952. During this period the author used intravenous in over 20,000 cases and is the pioneer for this form of anaesthesia for dental use in Britain.

The author employs the single type of injection which varies from the continuous method which is more commonly used in America. While he stresses the importance of care and skill in the technique, the same lack of satisfactory training facilities for dentists interested in general anaesthesia appears to exist in Britain as in this country.

Appendix II, at the back of the book is the author's reply to a general attack on intravenous anaesthesia and particularly its use in dentistry.

A similar situation prevails in this country where not only other professions, but also some members of our own profession are critical of dentists giving general anaesthesia.

The book is highly recommended by the reviewer to dentists who are interested in general anaesthesia. It is refreshing to read what one man has accomplished irrespective of the antagonistic attitude of other professions and probably very little encouragement from his own.

R. E. DIPROSE

ROYAL CANADIAN DENTAL CORPS NEWS

Captain Harold Rossmore Brown recently promoted to the rank of Major was born in Montreal, Que., on January 9, 1903. Major Brown attended Westmount High School and graduated from the Faculty of Dentistry, McGill University, in the spring of 1926. On September 11, 1940, he was appointed an officer in the C.D.C. After serving in Canada until 1942 he proceeded Overseas to serve in the United Kingdom and Continental Europe. On demobilization he resumed practice in the city of Montreal. He was re-appointed to the R.C.D.C., November 10, 1948, and posted to the East Coast for duty. He is married.

On Tuesday evening, March 31, 1953, Major T. L. Marsh of the Directorate Staff spoke on the radio program "Voice of the Army," which was dedicated to the R.C.D.C.

The following changes of Command have taken place in the Reserve Force Companies during 1952:

No. 5 Fd. Coy. R.C.D.C. (RF) Halifax, Nova Scotia—A/Lieut-Col J. E. Merritt succeeded Lieut-Col J. R. Vaughan.

No. 8 Fd. Coy. R.C.D.C. (RF) Vancouver British Columbia—A/Lieut-Col I. G. MacKenzie succeeded Lieut-Col F. A. Smith.

CANADIAN DENTAL ASSOCIATION NEWS

FROM THE OFFICE OF THE SECRETARY

British Columbia Withdraws Proposed Technicians Act:—The British Columbia Legislature has accepted the recommendation of the Private Bills Committee that the proposed Technicians Bill is not in the public interest.

This proposed Bill would have established, if enacted, a profession of dental technicians with the right to deal directly with the public. At a hearing before the Private Bills Committee of the British Columbia Legislature on March 5 last briefs were presented and the content of the Bill was argued. The Solicitor representing The Dental Technicians Society of British Columbia argued that the Bill had as its sole objective a Christian act to give working people dental plates at a reasonable cost.

In opposition to the Bill three briefs were presented:

1. College of Dental Surgeons of British Columbia—In presenting a brief the Solicitor for the College stated that his clients could not agree to any bill contrary to the Dental Act and the proposed Bill was a direct contradiction; that prosthetic dentistry was not confined to mechanics and that the proposal was for the technician to employ the dentist instead of the dentist employing the technician.
2. Canadian Dental Association — The C.D.A. Secretary presented a brief detailing the status of the dental technician as compared to the dentist; reviewing the history of the subject on a world-wide basis and stating a list of definite reasons against enactment.
3. Dental Laboratory Association of British Columbia—The Solicitor for the Laboratory Association presented a

brief stating that his clients were unalterably opposed to the Bill.

This Bill constituted a real threat to the practice of dentistry and it is gratifying to note that the Legislators of British Columbia realized the serious consequences of such legislation in acting for the protection of the public.

Income Tax—Dentures:—In certain areas dentists' accounts containing denture services have been disallowed to patients by income tax authorities for purposes of the deduction when making income tax returns.

Under the types of medical expenses which qualify for a deduction from income are payments to a medical practitioner, dentist, or nurse qualified to practise under the laws of the place where the expenses were incurred.

By amendment to The Income Tax Act payments for artificial limbs, a spinal brace, a brace for a limb, an aid to hearing or a wheel chair were allowed as deductible. As dentures were not stated in this amendment, it is presumed that some income tax authorities interpreted that dentures were not allowable.

This point was taken up with the Minister and as a result satisfactory interpretation has been made. The following paragraphs are contained in a letter from the Minister of National Revenue:

"You will recall our conversation in Ottawa last month and our discussion of the status as medical expense, under The Income Act, of the cost of dentures included in a receipted account furnished by a dentist to a patient.

"Consideration has been given to this matter and I am able to inform you that the cost of dentures billed by a dentist to his patient will be taken into consideration as a medical expense, provided, of course, that the provisions of Section 26(b)(i) have been complied with."

Statements of Interest:—Dean J. P. Walsh, in The New Zealand Dental Journal states that it costs the government of New Zealand as much to train a school dental nurse as it does to train a dentist. He explained that the public receives from a nurse a partial service for eight years, from a dentist a comprehensive service for forty years.

Tooth Decay.—Under a survey conducted by the American Dental Association's Bureau of Economic Research and Statistics, in which 4,000 family dentists submitted reports on 39,679 patients, tooth decay was found to be the principal reason for the loss of teeth up to the age of 39 for women and 34 for men. After these ages the loss of teeth was

due, primarily to periodontal diseases.

Fluoridation.—It is reported, as of February '53, over 600 municipalities in the United States have fluoridation of their water supply.

Dental Consultant Appointed to WHO:—The Federation Dentaire Internationale has requested the appointment of a full-time dental officer on the staff of the World Health Organization. Action is expected to be taken at the Sixth World Health Assembly in May at Geneva, Switzerland.

According to Gerald H. Leatherman of Great Britain, F.D.I. Secretary-General, the Federation believes that a dental officer on a permanent basis can be of the greatest help for the aims of both the World Health Organization and the Federation Dentaire Internationale. Since 1948, several resolutions relating to the development of a dental health program with the assistance of the F.D.I. have been approved by W.H.O. Assemblies.

In 1950, the W.H.O. appointed Dr. Philip Blackerby of Battle Creek, Mich., as a dental consultant for a three-month period. Two years later, the present incumbent, Professor G. Toverud of Oslo, Norway, was appointed as a consultant for a term of five months and will serve until April 30, 1953. The F.D.I. is of the opinion, according to Mr. Leatherman, that dental consultants are unable to give adequate assistance in building up a practical dental program when they are employed on a short-term basis. The Federation urges the continuance in office of Professor Toverud with the request that in the 1954 budget, a sum be set aside for a full-time dental officer.

The F.D.I. recommended that for success in preventive dentistry, the following subjects be studied on an international level; (1) nutrition and diet, (2) fluoridation of water supplies, (3) topical fluoride applications and (4) correct methods of oral hygiene and conservative treatment.

Additions to the Library

Anderson, D. J.—Physiology for dental students. 1952 344 p. illus.

Boyle, H. H.—Design of the natural dentition. 1952. 126 p. illus.

Canadian Pharmaceutical Association Inc.—The Canadian Formulary with French Supp. 1949. 124 p.

Chateau, J. M. and Chateau, M.—Précis d'orthodontie et d'orthopédie maxillo-faciale. 1950. 286 p. illus.

Darcissac, M.—Le bridge "amorti" suivi d'une technique du bridge total. 1949. 102 p. illus.

Drummond-Jackson, S. L.—Dental practice management. 3rd ed. 1952. 357 p. illus.

Drummond-Jackson, S. L.—Intravenous anaesthesia in dentistry. 1952. 152 p.

Fish, E. W.—Principles of full denture prosthesis. 1952. 140 p. illus.

Landon, A. — Thérapeutique dentaire. 1952. 130 p.

Lebourg, L.—Recueil de questions posées aux examens de chirurgien-dentiste. 4th ed. 1948. 103 p.

Muzy, E.—La thérapeutique orthopédique fonctionnelle de la face. 1952. 159 p. illus.

Pappo, H. -E.—Dens in dente. 1949. 47 p. illus.

Roberts, Ff.—The cost of health. 1952. 200 p.

Ruppe, Ch.—Maladies de la pulpe et monoarthrites alvéolo-dentaires. 1948. 63 p.

Ruppe, Ch.—Semiologie des affections de la bouche et des dents. 2e ed. rev. et complétée. 1948. 249 p. illus.

Turner, C. E.—School health and health education. 1952. 472 p. illus.

Waerhaug, J.—The gingival pocket. Anatomy, pathology, deepening and elimination. 1952. 186 p. illus.

Williams, P. O.—Careers in medicine by various authors. Edited by P. O. Williams. 1952. 265 p.

XIe Congrès Français de Stomatologie — Rapports — Questions en Discussion. Paris, Octobre 1948.

XIe Congrès Français de Stomatologie — Compte Rendu—Discours—Discussion des Rapports—Communications. Paris, Octobre 1948.

ANNUAL STATISTICAL DATA RETURNS

Through the cooperation of the Provincial Registrars we are able each year to produce a census of the dental profession in Canada. Comparative study of these annual returns forms the chief basis of computing requirements for dental personnel.

The overall increase in the number of Canadian dentists this year is only 39, as compared with the total number stated for January '52. This small increase results in little change in the ratio of dentists to population. The ratios given are computed on the 1951 census figures which are the last accurate figures available. As is well known, there has been a considerable population increase since June 1951 and if ratios were possible based on actual population figures it is quite probable that practically all provinces would show an increased number of people per dentist.

The loss of personnel by death and retirement remains practically constant from year to year, being 2.3% for 1952. The number of dentists employed in full-time salaried positions continues to increase. For 1951 some 309 dentists were reported to be on full-time salary and for 1952 there are reported to be 364. The number for the four recognized specialties is reported and it is interesting to note that there are almost as many orthodontists as the other three specialties added together.

Increased dental personnel cannot be anticipated until enlarged provision of teaching facilities becomes available. This situation has been repeatedly pointed out to the authorities concerned.

TABLE I
STATISTICAL DATA RE DENTAL PERSONNEL IN CANADA
(As reported by Provincial Registrars) As of January, 1953

Province	No. of Dentists Reported			During year of 1952			Total Increase or Decrease 1938*	Ratio Total No. of Dentists per Capita Population
	Male	Female	Totals	Deaths	Retirements	Additions		
Nfld.....	24	0	24	0	0	3	+6	1/15059
P.E.I.....	33	0	33	0	1	3	+3	1/2983
N.S.....	195	2	197	6	1	8	+28	1/3262
N.B.....	113	0	113	1	2	6	+3	1/4564
Quebec.....	1238	4	1242	12	10	56	+368	1/3266
Ontario.....	2196	22	2218	24	38	98	+286	1/2073
Manitoba.....	257	1	258	1	2	6	+7	1/3045
Sask.....	221	2	223	1	0	10	+13	1/3730
Alberta.....	348	4	352	3	1	30	+116	1/2669
B.C.....	551	4	555	6	9	28	+193	1/2099
Totals.....	5176	39	5215	54	64	248	+1023	1/2686

Population figures used in this table are those issued by the Federal Bureau of Statistics as of June, 1951.

*Figures for increase or decrease as compared to the pre-war year 1938 are given for comparative purposes.

TABLE II
MOVEMENT OF CANADIAN DENTISTS DURING 1952

To:	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	U.S.A.	Hong Kong	S. Africa	Great Brit.
From:														
Nfld.	0	0	0	0	0	1	0	0	1	0	0	0	0	0
P.E.I.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N.B.	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Que.	0	0	0	0	0	0	0	0	0	1	1	0	0	0
Ont.	1	0	0	1	1	0	4	2	5	5	0	1	1	0
Man.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sask.	0	0	0	0	0	0	0	0	2	0	1	0	0	1
Alta.	0	0	0	0	0	0	1	0	0	0	1	0	0	0
B.C.	0	0	0	0	0	0	0	1	1	0	2	0	0	0

TABLE III
NUMBER PRACTISING SPECIALTIES, BY PROVINCE
(Only those practising the specialty designated full-time enumerated)

	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Totals
Dental Oral Surgeons (Exodontists).....	0	0	1	0	3	21	4	0	2	3	33
Orthodontists.....	0	0	1	0	14	32	3	1	3	9	62
Periodontists.....	0	0	0	0	2	15	1	0	1	2	21
Pedodontists.....	0	0	0	0	2	4	2	0	1	4	13
Totals.....	0	0	2	0	21	72	10	1	7	17	129

TABLE IV
NUMBER EMPLOYED IN HEALTH SERVICES BY PROVINCE
As of January 1953

	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Totals
Dental Schools: (Teaching Staff)											
Full-time.....	0	0	1	0	8	13	0	0	2	0	24
Half-time.....	0	0	0	0	17	5	0	0	16	0	38
Hospital Service											
Full-time.....	0	0	3	2	0	27	3	3	5	10	53
Half-time.....	0	0	0	0	0	3	0	0	0	0	3
School Dental Service:											
Full-time.....	0	0	1	0	12	17	1	0	3	18	52
Half-time.....	0	0	3	2	6	57	2	1	3	1	75
Public Health Service:											
Full-time.....	0	1	4	1	1	13	1	11	0	5	37
Half-time.....	0	0	0	0	6	0	1	0	0	0	7

TABLE V
TOTAL NUMBER EMPLOYED BY FEDERAL DEPARTMENTS
As of January 1953

Department of Veterans Affairs.....	40
Department of National Defence.....	150
Department of National Health and Welfare.....	8
Total.....	198

"We have no right to sacrifice principle for the sake of peace.—We can sacrifice our body but not our conscience."

Supporting Membership—International Dental Federation:—At the recent meeting of the C.D.A. Executive, the Secretary was appointed National Treasurer of the International Dental Federation. The F.D.I. is the world organization representing the dental profession and is supported entirely upon a voluntary basis. The Canadian Dental Association is a member with the national dental organizations of practically all other countries of the world. Each national body pays an annual subscription based on the number of members.

Supporting members are individual members of the various national associations. The Supporting Membership Fee in Canada is \$9.00 per annum which includes subscription to the quarterly *Journal of the F.D.I.* Several Canadian dentists have been individual members of the F.D.I. over the years but there is necessity to expand the number of members in order to adequately support the organization. Further information is given on the following pages. It is hoped that former members and new additional members will make use of the attached form to be returned to this office. Please make cheques payable to:

Don W. Gullett,
National Treasurer.

Points re International Dental Federation:—The F.D.I. was founded in 1900 at Paris and with the exception of the war years has held regular meetings. It is the oldest of world organizations representing health professional groups. At the London Congress of the F.D.I. held last year over 70 countries sent representatives.

What is the primary objective of the F.D.I.?

The original objective of the Federation was to sponsor an international dental congress at regular intervals. As the Federation evolved through more than half a century, the original objective became simply a means of implementing the present broad objective: "The attainment by all peoples of the highest possible level of dental health in its relation to the individual as a whole".

What are the functions of the F.D.I.?

Within the broad assignment of promoting the dental health of the public and the advancement of the dental profession throughout the world, the Federation has the following specific functions: to promote an international dental congress every five years; to aid in the development of strong national dental societies in all countries of the world; to encourage closer relations and the exchange of information between the

national dental societies; to publish the *International Dental Journal*; to study and report on dental problems of international interest; to cooperate with other international organizations in the fields of science and health; to recognize by appropriate awards and prizes, contributions to the advancement of dentistry; to stimulate the establishment of documentary centres for the collection of dental literature.

How is the Federation financed?

The Federation is financed entirely by voluntary contributions from dental societies and individual dentists interested in fostering sound international relations. More specifically, the Federation is supported by (a) annual dues paid by the member national dental societies; (b) voluntary contributions from individual dentists who enrol as "Supporting Members" of the Federation; (c) any surplus remaining after the promotion of an international dental congress; (d) contributions of time and effort from its officers and members who conduct the program of the Federation without compensation in all but one or two instances.

Owing to the vast program which still remains to be taken in international dental affairs and owing to the fact that many new demands are being made on the Federation for assistance and guidance in many fields, the present support of the Federation is not adequate. Through the medium of "Supporting Membership" individual dentists may pay an annual subscription and thus contribute substantially to the support of an international program in dentistry.

What are the benefits of membership in the Federation?

Only by membership in the Federation, can any national dental society make its contribution to international progress in dentistry. Many international organizations will cooperate only with other international organizations, and thus the Federation presents the only medium for such cooperation in the field of dentistry. The Federation, for example, is the authoritative voice of the dental profession in discussions with the World Health Organization, the official instrument of the United Nations dedicated to the improvement of the world's health.

"Supporting Membership" in the Federation provides the individual dentist with an opportunity to make his contribution to international affairs not only in dentistry but in the broader fields which relate to improved international understanding and good will. In addition, the "Supporting Member" of the Federation will receive an annual mem-

bership card; an annual certificate of membership; occasional news bulletins on the activities of the Federation; admission to the annual sessions of the Federation and a reduced fee for attendance at the quinquennial international dental congresses; issues of the *International Dental Journal*.

How is the Federation governed?

The general management and control of the Federation is vested in the General Assembly which is made up of delegates chosen by the member national dental societies. In addition there is a Council which is elected by the General Assembly and which conducts the affairs of the Federation between annual sessions.

Where are the headquarters of the Federation?

While the Federation is legally incorporated in Belgium, its present permanent headquarters are in London. The Secretary-General is the chief executive officer of the Federation and maintains headquarters at 35, Devonshire Place, London W.1, England.

How is the program of the Federation conducted?

The program of the Federation is conducted by the permanent staff of the Secretary-General; by the work of commissions, or committees, appointed to study a specific phase of dental affairs; through the reports presented at the annual business session and through the elaborate scientific program presented at the international dental congresses.

At the present time, the Federation

has standing commissions in the field of dental education, dental military services, oral hygiene or dental health, dental science and research and public dental services. Other commissions are formed from time to time to survey new problems as they arise.

What is the future of the Federation?

The future of the Federation can be outlined only in terms of the support that is given it by the national dental societies and individual dentists the world over. The level of dental health nowhere is fully satisfactory and the standards of the dental profession and of dental practice must be constantly improved. More and more the countries of the world are coming to realize that improved health is a universal problem and can be solved only by universal exchange of knowledge and cooperation. The *Fédération Dentaire Internationale* is the chosen instrument of the world's dental profession to achieve these goals. If dentistry is to have its proper voice in global discussions and solution of the problems relating to improved health, it must have at its disposal an effective agency for international activities. The Federation is organized to meet this need and, for the future, needs only the unstinting moral and financial support of those who have dedicated their lives to the improvement of the world's dental health.

(The preceding information given has been compiled from material prepared by Dr. A. E. Rowlett, Honorary President and Dr. Gerald Leatherman, Secretary-General of the Federation. To a large extent the form given is taken from a similar publication prepared for circulation to the members of the American Dental Association.)

APPLICATION FOR SUPPORTING MEMBERSHIP INTERNATIONAL DENTAL FEDERATION

NAME

ADDRESS

I enclose cheque for \$9.00 for membership which includes subscription to the *Journal of the International Dental Federation*.

.....
(Signature)

Note: Simply complete this form and return to The Secretary, Canadian Dental Association, 234 St. George Street, Toronto together with your cheque amounting to \$9.00, plus exchange, made payable to Don W. Gullett, National Treasurer.

NEWS FROM THE PROVINCES

ONTARIO

The Academy of Dentistry, Toronto, was addressed by Dr. W. G. McIntosh on March 12. This was the final and best attended meeting of the year. Dr. McIntosh gave a most informative paper which will be published in this Journal soon.

The Ladies' Auxiliary of the Toronto Academy of Dentistry has contributed to a fund established several years ago to provide services for needy children with dental abnormalities such as cleft palate, harelip, congenitally missing teeth and maxillofacial injuries. Over the years \$2,500.00 has been contributed. This year a further amount of \$637.00 has been donated. In addition, the Ladies' Auxiliary has made a donation of \$200.00 to the Dental Research Fund of the Faculty of Dentistry.

Dean R. G. Ellis was guest speaker before the Hamilton Dental Association on April 16.

Dr. J. H. Johnson was guest speaker before the Grey-Bruce-Dufferin Dental Society at Owen Sound on April 22.

The Dental Alumni section of the University of Toronto Alumni Association is very happy to congratulate Dr. Norman Vickers of Hamilton who has been elected recently as Chairman of the Hamilton Board of Education. Dr. Vickers is probably the youngest chairman of any Board of Education in Ontario—he is only 29.

The Dental Alumni is always proud of its members who actively participate in the public life of their community. Such participation not only brings honour to themselves but also to our profession as a whole.

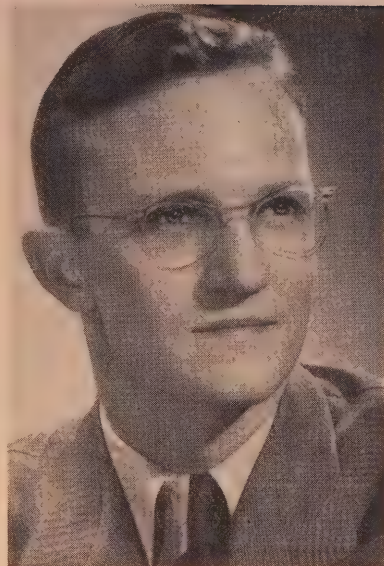
Congratulations Norman.

Jesse Fullerton

QUEBEC

It would be more interesting for the doctor and dentist and more advantageous to the patient if there was a closed corporation between the two professions. Guest speaker Gerald W. Halpenny, M.D., C.M., F.R.C.P., followed up this opening theme by discussing those aspects of rheumatism and heart disease of interest to the dentist at the March 23 meeting of the Montreal Dental Club.

Dr. Halpenny mentioned that 10,000,000 persons in the U.S. suffer from some form of crippling arthritis, one of the oldest diseases known to man. Of the 100



DR. NORMAN VICKERS

odd types of the disease he discussed the three most common: Acute, in which the infectious agent is known; Rheumatoid A, in which the infectious agent is not known; and Osteo, a degenerative condition associated with old age.

Since the infectious agent was not known in Rheumatoid arthritis theories were put forward in the past that it was associated with a focus of infection elsewhere in the body. In the twenties a focus of infection began to be thought of as "anything readily accessible to surgery" and so the wholesale removal of teeth, tonsils, and "acute remunerative" appendix was considered a cure for arthritis.

Later some investigators began to doubt the lasting effects of these procedures and follow-ups on cases showed that over a period of time few if any of these cases were improved. This swung the pendulum the other way and by the thirties the practice of removing these organs as a cure for arthritis was discontinued. Subsequent investigations have shown the validity of these latter findings and so the dentist should be wary of removing any sound teeth or properly treated endodontia cases from patients suffering from arthritis even on a physician's recommendation.

Rheumatic fever is not important to the dentist per se but the sequellae of the disease are important. "Rheumatic fever licks the joints but bites the heart" and the resultant diseased heart valve is easily infected by infectious organisms in the blood stream. Before the antibiotics, a staph infection resulted in Bacterial Endocarditis and death came in a few months. A strep viridans infection took a longer period — 18 months — to produce death and so was called Sub-acute Bacterial Endocarditis.

Strep. viridans is one of the commonest pathogens in the mouth and if they enter the blood stream as a result of extractions or other dental work the result is serious for the person with rheumatic or congenital heart disease. With antibiotics 80% of these cases can be saved. Dr. Halpenny recommended prophylactic dosage the day prior to, the day of, and the day following dental work. He felt that penicillin was better than the sulphonamides for this work and suggested the intramuscular administration should be used rather than by mouth. Aureomycin may also be used, especially in those cases where oral dosage is indicated or where there is a contraindication for penicillin.

In discussing heart diseases, Dr. Halpenny explained how the lumen of the arteries becomes diminished in size due to plaque deposition on the walls of the arteries in old age. In the smaller arteries—especially those of the brain and the heart—the lumen may be so restricted that the flow of blood carrying oxygen is diminished and so cannot supply oxygen fast enough if there is any extra exertion by the body. Such exertion—or the emotional disturbance of a dental appointment—may be serious for those people who have coronary heart disease. Such signs as a gasping for air or pains in the midline of the chest may allow the dentist to be the first to notice angina pectoris or other heart disturbances since, as Dr. Halpenny noted, people tend to go to their dentist twice a year but to their physician only when they are sick.

The dentist should be wary of using adrenalin on those patients suspected of heart conditions. Dr. Halpenny mentioned nor-adrenalin as being a safer vasoconstrictor.

In closing Dr. Halpenny advised an adequate case history and the use of a thermometer as good diagnostic aids in determining the patient's fitness for any dental procedures.

Dr. E. T. Bourke thanked the speaker for a most informative and interesting presentation.

During the course of the meeting Dr. Barker was elected to membership in the Club and members were reminded of

the Knowlton Golf week-end to be held on June 20. G. D. Armstrong

A meeting of the **Mount Royal Dental Society** was held March 15. The speaker of the evening was Dr. Samuel Cripps who spoke on "The British Dental Health Scheme." Dr. Cripps spent several years in England following his discharge from the Canadian Dental Corps, and was thus well qualified to give his impressions of the British Scheme.

Dr. Cripps briefly described the history of dentistry in England, pointing out that originally university training was not compulsory. Since 1921 only university-trained were permitted to practise dentistry, but the old type of technician and apprentice-trained men were allowed to continue if already in practice. Ultimately only university graduates will remain in dentistry.

Dr. Cripps pointed out how Health Service became a political issue in England. It was made appealing to the public, and opposition to it by professional bodies was overcome by divers means. Dentists had to join the scheme if they wanted to be left with any sort of a practice at all.

The dental profession was induced to enter the scheme by (1) an attractive scale of fees, with no limit to annual earnings. This provision did not last very long. (2) Fixed remuneration regardless of age, ability, training, etc. The scale of fees was cut later by 30% and again by a further 25%. The inauguration of the scheme led to a rush for service on the part of the public. Dental supplies, particularly x-ray films and artificial teeth, were at a premium. The practitioner had to work long and hard to keep up with the demand for treatment. Professional opinion was secondary to that of the local executive councils, composed mainly of lay people, who decided on policies and ethics.

Dr. Cripps sounded a warning to Canadian dentists to avoid falling into the position of their British confrères. The interested observer comes away with the impression of a precarious standard of dentistry, a children's dental service seriously threatened by a shrinking personnel lured away by the tempting offers of scheme practice, and a myriad of forms and red tape. Many who chose to remain outside the plan soon found themselves with a dying practice.

The March full-day meeting of the Mount Royal Dental Society was held on the 27th with Dr. Harmon Shohet of Boston the clinician of the day. Dr. Shohet's topic was "Mouth Rehabilitation and Disturbances of the Temporomandibular Joint (Costen's Syndrome)."

Dr. Shohet first illustrated, with the aid of slides, his personal technique in rehabilitating badly broken-down cases. He guided his audience through the examination, both clinical and on study models; and showed how to reset the models on the articulator in correct centric and bite-height. Dr. Shohet then recommended that the patient wear an acrylic splint or bite-block for a while before proceeding with the final correction.

In preparing the mouth for final restoration, Dr. Shohet advocated completing the preparations on the teeth of one jaw, leaving unprepared one central tooth and one on each side to act as guides and stops. Dies and counter-dies are then made and a new model made with the counter-dies in place. With the aid of a transfer-guide the study model cast is replaced by the master model. This procedure is then carried out for the cast of the second jaw. Both casts are thus properly set up with the necessary preparations completed. The required restorations are then completed and inserted. The three unprepared teeth in each jaw are then looked after as individual cases.

Dr. Shohet then presented a paper on "Theoretical Aspects of Reconstruction and Costen's Syndrome." This paper laid the basis for Dr. Shohet's procedure and bore out many of the points he had previously outlined.

Dr. Shohet followed this paper with a number of slides illustrating actual cases. A lively period of discussion followed.

Dr. D. H. Muhlstock thanked the speaker on behalf of the society and the meeting was then adjourned.

A. Bazerman

A "Symposium on Endodontia" was presented to the **Montreal Endodontia Society** by three of the members at the March 27 meeting held at McGill University.

Discussing the "Basic Requirements in Endodontia," Dr. S. A. MacSween stated that the pulpless tooth, canals of which have been treated and filled by current scientific procedures can remain and function as a useful member of the dental arch and that there is abundant proof to substantiate this claim.

The usual procedure in root canal therapy, stated Dr. MacSween, is to eradicate pulp tissue, vital or non-vital, infected or non-infected, under aseptic conditions. This is followed by proper instrumentation and sterilization of the canal with radiographic control for measured filling of the canal. The canal is filled and the tooth taken out of occlusion.

Prior to undertaking endodontic therapy, it is important to realize that ex-

tremes of age and chronic disease are contraindications for successful endodontia. Also to be considered is the value of the tooth and the size, number, shape and accessibility of the canals. The patient must also be made to realize the importance of complete cooperation in keeping appointments.

Dr. MacSween closed his presentation by discussing control of sterilization and the value of the paralleling extension-cone technique in radiographic interpretation.

The next speaker, Dr. G. Zimmerman discussed "Endodontic Procedures." Referring to the use of the indispensable rubber dam, it was mentioned that not only was it necessary for the control of sepsis, but also it eliminated any danger of the loss of small instruments down the trachea.

Where badly broken down teeth are to receive endodontic treatment, Dr. Zimmerman explained that the cavities should be filled before treatment is begun; the use of a copper band filled with cement is often of value where a great deal of tooth has been lost to serve as a temporary crown.

The opening into the canals should be large enough to completely expose them but care must be taken that the floor of the pulp chamber is not injured; the use of iodine followed by alcohol is often of value in locating small posterior canals, the openings being stained by this method. The actual opening and cleansing of the canals should be done in a systematic manner but care must be taken not to traumatize the periapical tissues; always use the smallest file first and proceed to the larger ones. The speaker warned that one should never proceed beyond one third of the canal in putrescent teeth at the first sitting, and that the value of irrigation was often underestimated.

With regard to broken instruments in the canal, the speaker suggested that if this occurred in the apical third, root resection was usually indicated, but that if it occurred in the incisal third, it could either be removed or left in place and bypassed. Following a reference to the use of non-irritating drugs, and the essential use of cultures, Dr. Zimmerman closed his presentation with a description of the filling of the canals; gutta percha is the material of choice in upper anterior teeth and occasionally in molars when a post crown is to be used, while silver points are usually used in the lower anteriors and all posteriors.

The third speaker of the evening was Dr. V. Tremblay who discussed "Surgical Intervention in Endodontia." "A pulp-involved tooth with periapical pathosis that cannot be restored to normal phy-

siological function by conservative methods of treatment is a candidate for surgical intervention," stated the speaker. Cases where surgery is indicated include the following: 1. Teeth with cystic involvement. 2. Teeth with broken root canal instruments that cannot be otherwise removed. 3. Teeth in which pulp death was due to a fracture of the root in the apical third and pulp decomposition has occurred. 4. Teeth the roots of which have been perforated in the apical third due to a curved apex. 5. Teeth in which the root canal filling has been placed beyond the apex. 6. Teeth with cup-shaped erosion of the apex; and 7. Teeth where a negative culture cannot be obtained.

There are, however, stated Dr. Tremblay, several contraindications for surgery which must be borne in mind; these include: 1. Where the sinus of the mandibular canal make accessibility difficult; 2. Older patients or persons suffering from general systemic disease where the general health of the patient does not warrant surgical intervention.

The speaker suggested several methods of performing root canal surgery such as: medication of the canal, overfilling, followed by surgery; immediate sterilization of the canal followed by surgery at the same sitting; root resection and filling of the canal with both ends of the tooth exposed at the same time; root resection when a crown is in place; or by simple periapical curettage. In all cases, however, it is important that the canal opening be hermetically sealed. With regard to whether amputation of the root end should be performed or not, Dr. Tremblay suggested that where infected, granulomatous, or cystic materials could not be completely reached, root tissue should be removed for accessibility; it should also be performed where gross root resorption is occurring. Dr. Tremblay closed by referring to the possible use of hyaluronidase in reducing post-operative swelling.

The above presentation was delivered previously to the American Academy of Dental Medicine in May 1952 and was completely reprinted in the *Journal of Dental Medicine*, Vol. 8, No. 1, January 1953.

R.F.H.

NEW BRUNSWICK

This year a **New Dental Act** sponsored by the New Brunswick Dental Society has finally passed the legislature. The bill was introduced at the first session of the Conservative Government and was bitterly contested. Minor alterations, deletions and one addition were made af-

ter the Corporations Committee discussed it on three different occasions. At one meeting of this committee a motion was made to have all dental technicians in New Brunswick of five years' standing to be registered as dentists.

Last year, it was found that as a result of two convictions the fines imposed by the magistrate were so small, in fact in one case it was five dollars on each of four counts, that it was useless to spend so much to prosecute those disobeying the law. Many technicians were taking impressions and inserting dentures. The maximum fine under the previous act was one hundred dollars.

The new Act besides defining dentistry very meticulously provides that the dental laboratory work may only be completed with a prescription from a registered dentist. The fine has been raised to two hundred dollars with a minimum of twenty-five dollars. Another clause allows the right to appeal a case which has been dismissed. Also there is a section by which an injunction may be obtained against anybody found breaking this new dental act. In addition there is one clause which the politicians insisted on putting into the act against the wishes and good judgment of the dentists. This section was inserted to protect the technician who had been breaking the law so he might not be boycotted. It reads, "No dentist shall withhold giving a prescription free of charge to such dental technician as the patient may designate."

The passing of this legislation shows that at long last the politician in New Brunswick is beginning to realize that in the public interest and the welfare of the individual more protection should be given. The N.B. Dental Society has had the backing of the Provincial Department of Health. The Faculty of Dentistry, Dalhousie University, sent over a representative, Professor J. P. McGuigan, who spoke before the Corporations Committee on the necessity of raising dental standards in New Brunswick. All in all it is very definitely a step forward for dentistry in this province. J. F. E.

NOVA SCOTIA

New Professor at Dalhousie: Dr. James Douglas McLean of the University of Alberta, Edmonton, has been appointed Professor of Dentistry at Dalhousie University. Since 1949 he has been Chairman of the Committee on Ethics of the Canadian Dental Association. He is Chairman of the Speakers' Committee for this year's convention of the Western Canada Dental Society. He is Asso-

ciate Professor of Prosthetic Dentistry at the University of Alberta.

Dr. McLean will begin his new duties at the opening of the fall term in September.—Halifax Chronicle-Herald.

BRITISH COLUMBIA

The Executive Committee of the **British Columbia Dental Association**, held in Vancouver late in March, was attended by all members of the Committee. Representatives were present from Victoria, New Westminster, Langley Prairie and Kamloops, as well as from Vancouver. Sub-committee chairmen of the Public Relations, Dental Health, Bulletin and Convention Committees were also in attendance.

Plans for the convention were presented by Dr. Ryan and Dr. Nimmons, and, after discussion by the Executive Committee, were approved.

The annual report of the Public Relations Committee was presented by Dr. Munsie. Further plans for a series of newspaper articles were announced, and authority was given to proceed. Arrangements were made for the liberation of funds allocated by the College for the program of the Committee.

Dr. O'Neil read the annual report of the Dental Health Committee. The report recommended, among many other features, the purchase of two copies of the film strip "Career in Canadian Dentistry" for the library of the Association.

The April meeting of the **Vancouver and District Dental Society** was given over to consideration of hydrocolloids. Dr. C. Wilson, head of the Crown and Bridge Department of the University of Oregon Dental School spoke at both afternoon and evening meetings. The subject was "Full Mouth Reconstruction with the use of Hydrocolloid in the Indirect Technique."

For the interval between the afternoon meeting and dinner, the Visual Education Committee showed the film "Investment in Canada," and, immediately following dinner, a film showing the locale of the Western Canada meeting — "Jasper, the Pride of the Rockies."

Also, during this meeting, Dr. Donald Galagan, Regional Dental Consultant for the United States Public Health Service, spoke on the latest developments on fluoride therapy.

Drs. Nickells, Kjekstad, Horne and Dohan, of Victoria, supplied the program

for the February meeting of the **Victoria Dental Society**.

The meeting spent considerable time discussing the matter of Public Relations, and also on the question of Council representation.

The newly formed **Upper Island (Vancouver Island) Dental Society** announces its slate of officers.

President—Dr. W. R. MacMillan

Secretary—Dr. J. J. Eakins

Executive members—Drs. W. B. Gordon, A. G. Verchere, M. A. Chambers and G. E. H. Montgomery.

An excellent edition of the "Bulletin" of the **B.C. Dental Association** has just been received. In addition to newsy reports from various parts of the province, the annual reports of committees of the Association were printed in full. This plan of presenting full annual reports of committees a month in advance of the annual meeting of the Association should result in much more pertinent discussion on major questions. In the past, many vital issues have been placed before the members without sufficient opportunity for them to learn the facts, and talk over the various aspects of the questions before the meeting.

ALBERTA

Faculty of Dentistry News: During January Dean W. Scott Hamilton attended a meeting of the Council of Dental Education, of which he is chairman, at the Canadian Dental Association Headquarters.

While Dr. Hamilton was East he visited one of our 1950 graduates, Dr. R. Van Alstine, at the University of Michigan, Ann Arbor. Dr. Van Alstine is completing his final year of a three-year post-graduate course in Oral Surgery. This course has been undertaken under the auspices of the Kellogg Foundation Fund for Dental Teachers.

Dr. Harold Samuels of the Department of Periodontia gave a paper on "The Management of the Periodontal Pocket," at the January meeting of the Edmonton and District Dental Society.

Dr. George Brass of the Operative Department attended the Mid-winter Convention in Chicago.

Dr. Wm. Orobko, also of the Operative Department, attended the Annual meeting of the American Association of Dental Schools which was held in Philadelphia, Pennsylvania, March 23-25.

Dr. J. D. McLean of the Crown and Bridge Department has recently been ap-

pointed Professor of Dentistry at Dalhousie University, Halifax. His duties commence in September. Dr. McLean has been a very valued member of this faculty since 1946, when he completed post-graduate studies at the University of Minnesota. He has also been very active in the local dental society and the Western Canada Dental Society. He is at present Chairman of the Committee on Ethics, of the Canadian Dental Association. C. G. Duke

SASKATCHEWAN

Fluoridation in Saskatchewan: Progress towards fluoridation in the province of Saskatchewan has been very slow. Dr. A. E. Chegwin, Director of Dental Services for the province has been working long and faithfully towards the implementation of an adequate program.

In the fall of 1949 and spring of 1950, Dr. Chegwin interviewed various directors of dental public health in the United States where already similar projects were operating successfully and on a wide scale.

He had many problems to overcome including lack of equipment and untrained personnel. However, the problems were overcome and the project was approved provincially. Approval from the health grant officials in Ottawa was secured and a grant was set aside for the operation of one unit. So at long last, some actions have resulted from his efforts. A mobile topical fluoride unit has been operating in the Weyburn Health Region for several months. This unit is the first of its kind ever to operate in Canada. It is presently operated by two dental hygienists. It is the immediate objective of the unit to treat all children in the Weyburn area who are three to seven years of age, as a beginning. The service will be extended as soon as possible to other regions and to other children.

Dr. Chegwin states, "In the minds of the public, dental services have consisted of treatment of the results of disease. Necessity for this type of service undoubtedly will always exist, but knowledge is available which can prevent a large portion of it, before it even occurs. The initiation of the topical fluoride mobile unit employing hygienists is the first positive step that we have been able to take in the development of purely preventive approach to the problem of improving dental health."

Dr. Chegwin has been very instrumental in initiating movements in the larger urban centres in the province to fluoridate

the water supplies. As a result of these efforts, and of others also, the City of Moose Jaw commenced the fluoridation of the communal water supply last December. Moose Jaw is the first city in the province to institute this practice. There are many other centres likely to follow this procedure in the very near future, such as Saskatoon, Prince Albert and Yorkton.

It was approximately forty-five years ago in Colorado Springs that a marked absence of dental caries was noticed in the teeth of the local people. As a result of the ensuing investigation, it was learned that fluorine was the causative factor in reducing decay. Fluorine chemically unites with enamel while it is developing pre-natally and also post-natally until approximately eight years of age.

It is only natural that as a result of these findings that the practice of fluoridation of communal waters should follow. It is now considered to be the most effective and least costly method to reduce dental caries. Dr. L. K. Brooks, of Calgary, quotes a cost of 10-20 cents per person per year, but not including the costs of installation.

Today there are three hundred and fifty cities in the United States, four cities in Ontario and one in Saskatchewan that have adopted the practice of fluoridation. It is now commonly believed that the prolonged ingestion of drinking water with a mean concentration of fluorides below a level which causes mottled enamel has no adverse effects. It is considered that further experiments are unnecessary.

Prince Albert Dental Society: At the April meeting of this Society, Dr. A. E. Chegwin, Director of Dental Health, was the guest speaker. He reported on conditions in the province relating to personnel and treatment, with special emphasis on the future of the Preventive program.

The prolonged period of discussion which followed, was an indication of the interest of all those present.

L.D.H.

MANITOBA

Dr. Roy Ellis, Dean of University of Toronto Faculty of Dentistry, was a welcome visitor and a much appreciated clinician at the **Winnipeg Dental Society's March 16 meeting.**

Dr. Ellis covered many phases of children's dentistry. He talked about active measures to make teeth more resistant to decay, pointing out that fluorida-

tion of water supplies was the best mass method at present and that time will kill the effectiveness of the arguments against it, as proof of its success steadily mounts.

Control of diet, repair of decayed surfaces, proper brushing habits and frequent bitewing x-rays were other points stressed as measures designed to control caries.

Dr. Ellis pointed out that 50% of all malocclusions and facial deformities result from minor early but unnatural changes during development of the dentition. He gave the following eruption sequence:

Upper	Lower
1. 6 yr. molar	1. 6 yr. molar
2. Central	2. Central
3. Lateral	3. Lateral
4. 1st bicuspid	4. cuspid
5. 2nd bicuspid	5. 1st bicuspid
6. cuspid	6. 2nd bicuspid
7. 2nd molar	7. 2nd molar

If 2nd molar comes ahead of cuspid

trouble will follow and when centrals are exceptionally wide apart you must immediately preserve every millimeter of arch size by proper fillings and space maintenance.

Dean Ellis spent some time on fractured anterior teeth and their treatment. He gave detailed technique for protecting them until permanent restorations could be made as well as showing slides of combination gold and plastic restorations and how to make them.

Dr. Ellis ended his day by showing moving pictures of a trip he took around the world, with many pictures taken in and around Singapore, where he was an External Examiner at the University. These beautiful colour pictures were very interesting.

Everyone at this meeting of the Society voted it a great success, ranking Dean Ellis, personally and as clinician, as one of the finest men who has appeared before the Society in recent years.

T.J.C.

BRITISH COMMONWEALTH NEWS

GREAT BRITAIN

Television: As a result of the public interest aroused by the program entitled "Modern Dental Surgery," given in October last, arrangements are being made for a further series of at least six twenty-minute sessions to be televised in "Women's Hour," on various aspects of dentistry. The B.B.C. have undertaken to consult the B.D.A. on all problems.—D. Mag. and Oral Topics.

AUSTRALIA

National Health Council Urges Fluoridation: The sustained research and discussion of this subject by experts that have been carried on in recent years in Australia have not been without their impact upon the daily press. The popular "Doctor's Column," under various titles, in our leading newspapers, has made reference from time to time to the efficacy and practicability of the fluoridation of the public water supply; parents have occasionally sought further information on the matter from their dentist. Now it is announced that the National Health Council will ask the Federal Government to make the addition of

a fluoride to Australia's water supplies compulsory under the National Health Scheme. — Australian Correspondent to Dent. Mag. & Oral Topics.

Overhead in Dental Practice: In the Annual Report of the Victorian Branch of the Australian Dental Association it is stated that the private practitioner faces great difficulties in the expansion of his services to the community, as the overhead costs of dental practice are today a problem to all members. A Sub-Committee formed to investigate this matter found that between June 30, 1949 and June 30, 1951 these costs rose by 63% and if action has not already been taken, fees must be adjusted accordingly.

INDIA

The Fight Against Poverty: The Atlantic Monthly reports that the national per capita income in India is less than \$50.00 a year and the poverty is constantly growing worse since most available land is already under cultivation and the population—at present 356 million—increases by more than 4 million each year.

"Oversleeping never makes your dreams come true."

GENERAL NEWS

The primary purpose of the **Strong-Carter Dental Clinic in Honolulu** is to provide dental service for children whose parents are financially unable to have them treated by a private dentist. It should be mentioned, however, that the aim and project of the Infirmary, from its very beginning, was more than that of a dental clinic whose program was based solely on remedial measures. While the need for relief and reparative work is recognized, the ultimate aim is prevention. From the outset, it was realized that a dental program which did not educate children and parents in the importance of sound teeth and general health would accomplish little. With this in mind, a school for training dental hygienists is also sponsored.

The demand for the services of the dental hygienists has increased immeasurably over the past decade and their importance as ancillary workers to the dental profession is widely recognized. Since the advent of sodium fluoride as a prophylactic measure for reducing dental caries, more dental hygienists are needed to give topical applications of sodium fluoride in areas where fluoridation of the community water supply is not practical. In Hawaii, the Dental Practice Act has been interpreted to permit the dental hygienist to administer sodium fluoride treatments. More dental hygienists must be trained to meet this new demand.

A total of 4,129 individuals, including 37 patients at the Shriners' Hospital for Crippled Children, received treatment last year. To care for these children, the Clinic expended \$69,570.38. Operations performed last year showed a net increase of 14,331 or 31 per cent over the year 1951.

The Strong Foundation donated \$80,000 to maintain the Dental Hygiene Training School between September 1926 and June 1951.

The Electron Microscope:—In the last fifteen years, the development of a new tool for research has brought about the introduction of the electron microscope. This instrument is one of the most important new contributions of our day because of the truly extraordinary way it has widened our ability to see directly into the fine structure of matter.

Man's vision has been carried down into the realm of molecules and he has been able to see, for the first time, some of the chemical units from which all matter is built. At the same time, some of the hitherto unseen viruses, which probably will include some of the simplest known forms of life, will be vis-

ible. With the ability to see molecules, plus the microscopy of viruses, the path of research may be leading us nearer to a scientific definition of the living process.

The potentialities and possible fields of application of the electron microscope, with its extensive range of vision, are tremendously numerous and equally unpredictable. In a single decade, this new research tool has opened up such an astoundingly big world of hitherto unseen objects that it will take a long time to record and interpret what we already see.—Northwestern Univ. Bul.

Under the subject heading "**Effect of Fluoridated Public Water Supplies on Dental Caries Prevalence**" report is made on the Seventh Year of Grand Rapids-Muskegon Study in the Public Health Reports of February, 1953. The article is prefaced jointly by Francis A. Arnold Jr., H. Truedley Dean and John W. Knutson.

The summary which appears at the end of the article is as follows:

"The methodology and results after 7 years of the Grand Rapids-Muskegon study have been described. The 1951 results on continuous resident children after 6½ years of fluoridation of the Grand Rapids water supply indicate:

1. There has been a reduction in dental caries rates in permanent teeth of Grand Rapids children ranging from 66.6 per cent in 6-year-old children to 18.1 per cent in the 16 year age group. Similar results have been obtained regarding the deciduous teeth.

2. Similar reductions have not been observed in Muskegon where the water supply remained "fluoride-free" (<0.2 ppm F) until the last 3 months of this study period.

3. This change in dental caries rates at Grand Rapids was also reflected in observations based on objective assessment, that is, a reduction in the number of missing teeth.

4. A comparison of the 1951 caries rates in Grand Rapids with those of Aurora, Ill., shows that insofar as can be determined to date the use of fluoridated water gives the same beneficial effects as does the use of a natural fluoride water of similar concentration.

\$100,000 Goal Achieved in Relief Fund of A.D.A.: Contributions to the 1953 Relief Fund drive has reached the goal of \$100,000 for the first time since the Fund was founded.

U.S.A. Association Membership Reaches 52,700 by March 1: At the end of February 52,710 members had paid their 1953 dues to the American Dental Association. This total kept pace with the record-breaking membership totals of 1952.

Emory Dental School Given Funds to Teach Management: A grant of \$3,000 has been received by Emory University School of Dentistry, together with the assurance of continuing grants during the next five years totalling a minimum of \$15,000, for the purpose of supporting undergraduate and postgraduate programs in practice management.

Anonymous donors have directed that the funds be used to improve opportunities for instruction in dental practice management which will result in improving the level of dental service to the public.

Fluoridation of Public Water Supplies: Francis F. Heyroth, M.D., Assistant Director, Kettering Laboratory, Department of Preventive Medicine and Industrial Health, College of Medicine, University of Cincinnati, reports on "Toxicological Evidence for the Safety of the Fluoridation of Public Water Supplies" in the April issue of the Journal of the California State and Nevada State Dental Society as follows:

"The results of animal experimentation show that the prolonged intake of quantities of fluoride too small to induce dental fluorosis does not give rise to any of the nondental manifestations of chronic intoxication by fluorides. Epidemiologic data and clinical and radiographic examinations of exposed industrial workers indicate that only when the fluoride content of a water supply exceeds 5 or 6 ppm. will its prolonged usage give rise to detectable osseous changes and then only in the most susceptible persons. The evidence as a whole is consistent in offering assurance that bringing the fluoride concentration in communal water supplies to that known to be optimal for dental health is a prophylactic public health procedure which has an ample margin of safety."

Clinical Use of a Chlorophyll Dentifrice: Drs. Austin H. Kutscher and Neal W. Chilton of New York report in the April issue of the Journal of the A.D.A. as follows on "Observation on the clinical use of a chlorophyll dentifrice":

"The effect of uncontrolled toothbrushing with a chlorophyll-containing dentifrice on the lactobacillus counts of 20 patients was studied before and after six

to nine months' usage of this dentifrice. No effect on the lactobacillus counts was noted.

"The effect of uncontrolled brushing with a chlorophyll-containing dentifrice on chronic gingivitis was studied. One hundred and nine patients used the experimental dentifrice, while 137 patients used a dentifrice of their own choice. At the end of six to nine months, no important differences were observed between the two groups with regard to changes in gingival appearance or gingival sensitivity incident to subgingival curettment. While there was some tendency towards decreased gingival bleeding in the chlorophyll dentifrice group compared with the control group, the difference was not statistically significant."

One out of each three members of the dental profession in the United States will be asked to cooperate in a **Comprehensive Survey of Dental Practice** to be conducted by the American Dental Association during May.

Purpose of the survey is to compile factual data regarding dental practice, providing a basis for comparison with results of a similar survey of the profession made by the Association in 1950.

Additionally, however, the survey will include questions on income and professional expenses of the dentist.

The survey is expected to provide data on the relationship between economic status in dentistry and such factors as age, number of years in practice, number and type of auxiliary personnel employed, number of dental chairs used, number of patients, geographical region and the like.

Mr. B. Duane Moen, director of the Bureau of Economic Research and Statistics, pointed out that the results of the survey should help not only to indicate trends in the field but also to give the individual practitioner a standard by which he may measure the efficiency of his own practice.

Chlorophyll: Recently Dr. A. H. Corwin, head of the Department of Chemistry at Johns Hopkins University, quoted to the American Chemical Society a report from the National Bureau of Standards which said that "we have no reason whatever to believe that chlorophyll has anything to do with deodorization."

Experiments by John C. Brocklehurst, M.D., of the Department of Materia Medica and Therapeutics, University of Glasgow, as published in the British Medical Journal of March 7, 1953, would seem to bear out this conclusion.

"Flamboyant" Advertising Claims for Chlorophyll Criticized: The chlorophyll industry has received what one publication termed "another black eye" as dental and chemical scientists joined in criticizing the "flamboyant" anti-odour, anti-decay advertising claims. Dr. Thomas J. Hill, of Cleveland, chairman of the A.D.A. Council on Dental Therapeutics, declared there is no conclusive evidence that either chlorophyll derivative or ammoniated dentifrices help to fight tooth decay. Speaking at the Greater New York Dental Meeting, Dr. Hill pointed out that results of scientific tests did not substantiate "cleverly prepared advertising copy." Meanwhile, Dr. J. Roy Doty, council secretary, speaking at the University of Illinois telephone extension course, emphasized that there is no "green wonder" or "white miracle" toothpaste that will magically prevent dental caries. No such dentifrice will do anything that a suitable toothbrush won't accomplish alone, he said, and despite all advertising claims, there has been no therapeutic dentifrice yet accepted by the council. —Minn. Dist. D. Jour.

Two booklets designed to aid dentists seeking practice locations have been issued by the **Bureau of Economic Research and Statistics of the American Dental Association.**

Individual dentists will be sent single copies free upon request to the Association's Order Department, 222 E. Superior St., Chicago 11, Ill. Copies have already been sent to all student members of the Association who are graduating this year.

One booklet is entitled "1953 Facts

about States for the Dentist Seeking a Location" and the other is called "Distribution of Dentists in the United States by State, Region, District and County."

"Facts About States" contains such information as distribution of dentists in proportion to population, economic conditions, licensure requirements and names of individuals in states from whom local information can be obtained.

"Distribution of Dentists," in addition to population breakdown, is concerned with statistics on population growth, per capita buying income and per capita retail sales.

Petition for National Health Plan:—In the House of Commons Debates at Ottawa on April 2 the following petition was presented:

"Mr. Speaker, I have the honour to present a petition signed by Howard Wightman of Creston, British Columbia, and considerably more than 100,000 other Canadians, praying parliament to consider the enactment of a comprehensive national health plan which would provide for all our citizens, irrespective of their income, full medical, dental, optical and other health care."—M. J. Coldwell.

IN MEMORIAM

Leo Michael Coughlin of Vancouver, B.C. died March 18. He served in the First World War and again as a major in the Second World War. He had practised in Vancouver for the past ten years.

He was a member of St. Peter and St. Paul Church.

Dr. Coughlin is survived by his widow, three sisters and three brothers.

DIRECTORY

Canadian Dental Association Headquarters—234 St. George Street, Toronto, Ontario.

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Hypothèse fluor-carie dentaire

par ADELARD LEBLANC, D.D.S., Lachine

L'emploi du fluor, comme moyen de réduire la carie dentaire, n'est pas une idée nouvelle. Dès 1874, Erdhart recommandait l'usage de pastilles de fluorure de potassium dans le but d'accroître "la qualité et la dureté de l'émail des dents des enfants." En 1892, Sir James Crichton Brown suggérait, à une réunion de la Société dentaire anglaise, "la réintroduction, dans la diète des femmes enceintes et des jeunes, d'une quantité de fluor, sous quelque forme naturelle, pour fortifier les dents." Sept années plus tard, Michel en mentionnait les propriétés bactéricides et antienzymatiques.

Toutefois, on ne reconnut son importance qu'à la découverte d'une relation inverse entre l'incidence de la carie dentaire et la teneur en fluor de l'eau potable.

De là naquirent deux mouvements distincts: l'un enthousiaste: "On pourrait enfin mâter la carie dentaire!" L'autre pessimiste: "Le fluor artificiel ne produirait pas les mêmes effets et, de plus, par nature, serait toxique!" Que faut-il en penser?

Premières études

Il devint évident, dès la première étude sur l'émail madré, que ces dents n'étaient pas plus susceptibles à la carie que les dents normales. Malgré leur structure défectueuse, McKay y notait, en 1925, "une curieuse absence de carie"; en 1928, Bunting et ses collègues observaient "un

comportement différent de la carie dans la bouche de ces enfants".

Des rapports semblables arrivèrent d'autres pays. Masaki, au Japon, remarquait, en 1931, "le pourcentage comparativement faible de la carie chez la victime de cette anomalie." Ainsworth, après l'examen d'à peu près 4,000 enfants des écoles publiques élémentaires d'Angleterre et de Galles, constatait aussi, "l'incidence négligeable de carie des régions endémiques en comparaison de toutes les régions considérées". En Argentine, Erasquin commentait sur "une relation inverse entre la carie dentaire et les "dientes veteados".

Etudes épidémiologiques

Cette information prit de l'ampleur lorsque l'on découvrit que le fluor était le facteur étiologique de l'émail madré. Un examen de 236 personnes de neuf ans montra un plus haut pourcentage d'exemption de carie, dans les endroits où l'eau potable en contenait de grandes quantités: par exemple, il était de 4% chez les 114 qui faisaient usage d'eau d'une teneur variant entre .5 et 1.5 p.p.m.; alors qu'il passait à 22% chez ceux qui se servaient d'eau où le fluor était présent dans les proportions de 1.7 à 2.5 p.p.m. Par ailleurs, la présence ou non de signes macroscopiques de fluorose ne semblait pas influencer la résistance de ces dents à la carie.

Des études plus poussées apportèrent

d'autres preuves de cette relation. Dans les endroits où cette défectuosité était généralement prévalente, un examen de 1902 enfants de race blanche, de 12 à 14 ans, révéla la présence de 201 dents cariées par 100 individus; la proportion passait à 314, en sept endroits où la distribution était inégale; et, à 415, dans un troisième groupe de 3,841 enfants qui n'avaient pas été exposés au fluor.

Même constatation au Colorado: les rythmes d'attaque étaient de 194, 296 et 343 par rapport à 163 dans les régions endémiques. Au Wisconsin, les moyennes étaient de 646 à 917 dents cariées par 100 enfants où l'eau ne contenait que de .1 à .5 p.p.m., et de 275, à Green Bay, où il y avait 2.3 p.p.m.

Les résultats de ces recherches furent comparés à des études locales: à Galesburg et Monmouth, où le fluor était mélangé à l'eau dans les proportions de 1.8 et 1.7 p.p.m. respectivement, et à Quincy et Macomb, où l'eau en était dépourvue. On choisit des enfants de race blanche, de 12 à 14 ans, qui se servaient continuellement de la même eau, et on considéra des facteurs tels que la diète, la latitude, et l'exposition au soleil.

La prévalence de carie, chez les sujets des 4 districts, différait beaucoup. Ceux de Galesburg et Monmouth, n'avaient que deux dents permanentes affectées alors que ceux de Quincy et Macomb, en avaient six et quatre. A peu près 36% des enfants des deux premiers endroits étaient exempts de carie, alors que le pourcentage tombait à 14% et à 4% chez les derniers.

Un autre point d'importance fut observé à Galesburg, où la teneur en fluor était juste suffisante pour donner naissance à la forme la plus négligeable de fluorose dans 50% des cas, et ne produire aucun signe macroscopique de la défectuosité chez le reste. Sur 243 enfants, 114 exhibaient de la fluorose; le rythme de la carie était alors de 200 par 100 personnes. Chez les 129 autres, exempts de cette lésion, l'incidence était de 186 par 100. De nouveau, on voyait que le facteur responsable de la diminu-

tion de carie agissait, que l'émail soit madré ou non.

Ces observations démontrèrent que le fluor était bien l'agent inhibiteur. Mais avant qu'on ne l'adoptât comme mesure de santé publique, il fallait répondre à une autre question: une concentration assez faible pour éliminer la fluorose serait-elle suffisante pour prévenir la carie d'une manière appréciable? C'est pourquoi, on entreprit, dans 21 villes, une étude détaillée de 7275 enfants de race blanche, âgés de 12 à 14 ans.

Les résultats en furent probants: l'indice D.M.F. était de 2.4 chez les 647 sujets employant de l'eau qui contenait plus de 1.4 p.p.m.; de 2.9, chez les 1403 s'alimentant à des sources dont la teneur variait entre 1 et 1.4 p.p.m.; de 4.2, chez les 1140 faisant usage d'eau dont le contenu de fluor allait de .5 à .9 p.p.m.; de 7.4, chez les 3867 élevés en des endroits où on ne trouvait que des proportions inférieures à .5 p.p.m. Les différences étaient encore plus grandes pour les dents antéro-supérieures.

Il y eut d'autres confirmations. Weaver rapporta que les enfants de South Shields faisaient à moitié moins de carie que ceux de North Shields qui est de l'autre côté de la rivière; cette différence serait expliquée par le fait que, dans le premier cas, le contenu de fluor de l'eau potable était de 1.4 p.p.m. alors que, dans le second, il n'était que de .24 p.p.m.

Les résultats suggèrent non seulement que le fluor était l'agent inhibiteur, mais aussi que l'on pourrait obtenir plein bénéfice en employant une concentration de 1 p.p.m. A ce compte, la fluorose n'est plus un problème. C'est ce que l'on vit à Aurora, où les proportions de fluor étaient de 1.2 p.p.m.: dans cette ville, 15% des enfants faisaient de la fluorose sur seulement 5% des dents, dont à peu près 4% sur les antérieures; cette condition ne pouvait être remarquée que par un connaisseur.

Analyses de laboratoire

Ces données épidémiologiques constituaient une forte évidence en faveur de la théorie fluor-carie dentaire. D'autres

expériences la rendirent plus significative.

Des analyses chimiques révélèrent que l'émail sain contenait .0111% de fluor et l'émail carié .0069%; il n'y avait pas de différence dans la dentine. Cependant McClure rejeta ces résultats, n'ayant pas pu les confirmer par ses études. Il déclara qu'une exposition au fluor amène une incorporation supérieure à la normale dans l'émail mais négligeable dans la dentine de leurs animaux de laboratoire.

Un fait important fut l'incidence inférieure de carie chez les rats dont on avait enrichi la diète de fluor; Cox et ses collègues notèrent une plus grande résistance même chez leurs descendants. Nous ne devons pas oublier toutefois que ces lésions ne sont que très peu semblables à celles que l'on voit chez les humains.

A la suite de ces expériences, on considéra l'emploi du fluor comme un moyen pratique de prévenir ou d'inhiber la carie. Les résultats obtenus suggérèrent la possibilité d'en ajouter des quantités fixes aux sources d'eau publiques, ce qui fut fait mais non sans débats acrimonieux. Les arguments déjà employées contre l'emploi de l'iode pour la prévention du goître, du nitrate d'argent dans les yeux du nouveau-né furent réintroduits: le fluor est un poison et l'artificiel ne serait pas efficace, disait-on. Mais avant de procéder à l'examen de sa toxicité et de son efficacité, nous en verrons brièvement le mécanisme.

Mécanisme

Il y a deux théories pour expliquer cette action. La plus répandue est celle de la modification de la structure de la dent. Avant l'éruption, il se ferait une déposition de fluorures de calcium au dépens des sels réguliers, carbonates et phosphates de calcium; pour Sobel, les phosphates seraient déposés en quantité supérieure à la normale. Après l'éruption, le constituant principal de l'émail, qui est un phosphate de calcium hydraté, serait transformé en fluor-apatite. Dans tous les cas, le nouveau composé offrirait

une plus grande résistance à l'action des acides, par une décroissance de solubilité.

La seconde théorie concerne la production d'acides; elle diminuerait, selon Bibby et Van Kesteren, à la suite de l'ingestion d'aussi peu que 1 p.p.m. de fluor.

Il n'est pas facile d'expliquer ce fait sur une base de croissance bactérienne. Une étude de métabolisme des lactobacilles a montré que de 1 à 100 p.p.m. ne l'affectait pas; par ailleurs, Bibby et Van Kasteren trouvèrent qu'il fallait au moins une concentration de 500 p.p.m. pour y apporter un retard. Mais les mêmes expériences révélèrent que 1 p.p.m. affectait la production d'acides. Ce serait le résultat d'une action sur le système enzymatique.

Il est donc évident que le mécanisme d'action du fluor doit être étudié davantage. Il n'en demeure pas moins vrai, toutefois, que la meilleure manière d'obtenir une immunité relative à la carie est par l'eau potable, surtout celle qui en contient 1 p.p.m. Mais est-il possible de transformer ce phénomène naturel en une mesure d'utilité publique?

Toxicité

Comme le fluor est un poison, bien des cris se sont fait entendre contre son emploi. On alla jusqu'à exposer des os et des organes d'animaux de laboratoire morts d'une intoxication au fluor, avant bien soin de ne pas dire que leur diète en contenait 50,000 fois le dosage proposé pour la consommation humaine. Mais considérons cette objection de plus près.

Toute drogue est toxique, si elle est absorbée en quantité suffisante, alors qu'elle peut être avantageuse, en doses limitées. C'est le cas du chlore qu'on ajoute à l'eau, de l'iode au sel; pourtant les deux sont des poisons protoplasmiques par nature. Sollman a rapporté que la dose mortelle de fluorure de sodium était de .5 gr par kilo de poids. On peut voir la futilité de cet argument quand on connaît les méthodes proposées pour l'emploi du fluor.

Quant aux effets cumulatifs, ils sont négligeables; Mackle dit que 88% du

fluor est excrété dans l'urine et 8% dans les selles. L'ingestion, par conséquent, de un ou deux mgrs de fluor, par jour, ne constitue pas un danger. McClendon poursuivit une étude au cours de laquelle 3 personnes en consommèrent 3 mgrs par jour, pendant un an; une autre personne en ingéra 3 mgrs, quotidiennement, durant 3 années. Dans les deux cas, on ne nota aucune augmentation de densité des os ou exostoses, ni même un effet toxique. Par ailleurs, l'application topique de fluor peut se faire sans absorption stomacale appréciable. Hodge considère que ce traitement, tout comme la fluoridation des sources d'eau, est un moyen d'action bien sûr.

Nous pourrions peut-être ajouter que, au cours des 100 dernières années dans diverses parties du monde, des gens ont bu de l'eau contenant du fluor, toute leur vie. Aujourd'hui des millions d'individus, aux Etats-Unis, consomment de l'eau dont la teneur en est de 2, 3, 4, 8 p.p.m. et plus, comme leurs ancêtres. Malgré ce fait, la science médicale et dentaire n'a pu découvrir aucun mauvais effet organique. Si elle a été incapable de reconnaître autre chose chez des centaines de milliers de gens qui ont bu de l'eau, dont le contenu de fluor allait jusqu'à 27 p.p.m., comment peut-on prétendre que l'addition de 1 p.p.m. apporterait des conséquences désastreuses?

Efficacité

Le second argument, à savoir que le fluor artificiel est différent du fluor naturel, est purement une conjecture. Si on l'emploie, le corps l'absorbera et les effets au point de vue prévention de la carie, seront identiques.

Après quatre années, les résultats de l'étude Newburg-Kingston furent les suivants. A Newburg, l'indice D.M.F., parmi les enfants de 6 à 12 ans, passa de 20.6 à 13.9 alors qu'à Kingston, on ne nota aucun changement. Le nombre de dents permanentes exemptes de carie, chez les sujets de 6 à 9 ans, s'était accru de 58.9 à 76.9, et chez ceux de 10 à 12 ans, de 23.8 à 32.5; la situation resta la

même à Kingston. Pour les âges de 5 à 8, à Newburg et à Kingston, la D.F. diminua mais la diminution fut plus grande dans la première ville. L'analyse du nombre d'enfants, qui avaient conservé toutes leurs canines et molaires temporaires saines, démontra une augmentation de 6.7 par 100 sujets à Kingston et de 21.3 à Newburg, plus de 3 fois autant.

A Grand Rapids, Michigan, on constata aussi une réduction par rapport à la période 1944-1945; elle était plus prononcée dans les groupes plus jeunes, soit 51%, dans celui de 6 ans, et 16.7%, dans celui de 13 ans.

A Lewiston, Idaho, l'incidence de carie, chez les enfants de 7 ans passa de 1.4 en 1947 à .6 de dent en 1950, une réduction d'à peu près 58%. Dans les groupes de 8 et 9 ans, la diminution fut respectivement de 35% et 25%.

Avant la mise en marche du projet, le rythme de la carie, chez les enfants d'école natifs de Marshall, Texas, et Jacksonville, était de 7 à 8 dents par enfant. Vingt et un mois après, on observait une diminution de 23% à Marshall alors qu'à Jacksonville, on ne voyait pas de différence. Dans le groupe de 6 ans, la réduction était de 47%.

Il serait facile de prolonger cette énumération et dire qu'à Sheboygan, Wisconsin, le nombre d'enfants de 5 ans libres de carie s'accrut de 29.6, en 1946, moment de la fluoridation de l'eau, à 43.1%, en 1950; qu'à Brantford, Ont., une réduction de 56% s'opéra chez les enfants de 6 ans et de 22% chez ceux de 12 ans. Mais le résultat serait le même: le fluor artificiel est aussi efficace que le fluor naturel.

L'efficacité du fluor, 1 p.p.m., dans l'eau potable pour réduire la carie dentaire, ne fait plus de doute. Il a ses limites: une partie de la population ne pourra pas être atteinte; 1/3 de la présente incidence de carie demeurera et on aura encore besoin d'un bon programme de santé buccale.

Mais si on considère la tâche à accomplir et les résultats conclusifs de ces expériences, on comprend mieux l'atti-

tude de l'A.D.A. qui recommandait "la fluoridation des sources d'eau municipales quand la procédure est approuvée par la société dentaire locale et employée en accord avec les standards établis par l'autorité responsable de la santé".

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Cours post-scolaire en chirurgie à l'Université de Montréal



Photo d'un groupe de dentistes inscrits à un cours post-scolaire en chirurgie à la Faculté de chirurgie dentaire, durant le mois de mars 1953.

Première rangée, de g. à d.: Chaussé, Ernest, Montréal; de Montigny, Gérard, Montréal; Gervais, Edouard, Joliette.

Deuxième rangée: de g. à d.: Millette, René, Trois-Rivières; Trépanier, Marc Y., Valleyfield; Horstein, Sydney, Montréal; Taillon, R. Gérard, St-Jérôme; Tremblay, Henri, St-Jérôme; Gervais, Guy, Joliette; Bernier, G. Henri, Montréal; Chatillon, Herman, Nicolet; Poirier, Richard, Nicolet; Dufresne, Yves, Trois-Rivières; Gascon Gabriel, Trois-Rivières.

Réactions allergiques aux antibiotiques*

par MAURICE DORAY, M.D., Montréal

Vous parler des antibiotiques est chose facile. Vous entretenir des merveilleuses découvertes de Fleming et de Benjamin Duggar, vous raconter les guérisons extraordinaires, les vies que ces armes de la thérapeutique moderne ont épargnées, serait une tâche des plus agréables.

Nous allons, si vous le voulez bien, envisager l'autre côté de la médaille et nous demander s'il n'y a pas des inconvénients, des désavantages et même des dangers dans l'emploi de cette médication et si, quelque puissante que soit leur action contre les microbes, il ne serait pas plus sage, dans certains cas, de s'en abstenir.

Le temps qui m'est alloué ne me permet pas d'entrer dans les détails ou d'énoncer les réactions à tous les antibiotiques. Aussi, je passerai sous silence l'érythromycine, la néomycine, la bacitracine, la polymyxine, la thyrothricine et peut-être quelques autres aussi mis sur le marché au moment où je vous parle.

Je vous dirai quelques mots de la streptomycine, de la terramycine, de l'auréomycine et de chloromycétine pour m'attarder plus longuement sur la pénicilline et les sulfas.

Ces derniers ne sont pas à proprement parler des antibiotiques, mais leur pouvoir bactériostatique les rattache au point de vue thérapeutique à ce groupe de médicaments.

La streptomycine nous donne trois types de réactions: des réactions cutanées, des réactions thermiques et des réactions nerveuses.

Réactions cutanées: caractérisées par un érythème généralisé du type scarlatiniforme ou des dermites de contact chez les gens qui la manipulent.

Réactions thermiques: qui font grimper le thermomètre à 104-105 et même 106°F. de température.

Réactions nerveuses: par atteinte de la huitième paire de nerfs crâniens, le nerf auditif et sa branche vestibulaire.

Les patients soumis à de longs traitements à la streptomycine présenteront une atteinte de la branche vestibulaire de l'auditif et accuseront de la céphalée, des vertiges et la perte de leur équilibre. Ceux qui auront reçu la dihydro-streptomycine souffriront plutôt de surdité.

Les lésions cutanées et thermiques sont de courte durée et disparaissent avec l'arrêt de la médication.

Par contre, les lésions nerveuses sont habituellement irréversibles. C'est pourquoi, il est d'usage de réserver cet antibiotique pour traitement de la tuberculose, sa toxicité étant trop grande pour justifier son emploi dans d'autres affections.

Avec la terramycine et l'auréomycine, nous rencontrerons aussi des *Rash* scarlatiniformes ou morbiliformes, mais nous serons surtout en présence de troubles digestifs. Ces troubles digestifs sont de deux ordres: ceux de la première portion du tube digestif (bouche, oesophage, estomac) et ceux de la seconde portion (intestin, colon, rectum).

Dans le premier cas, nous aurons affaire à des stomatites, des nausées, des vomissements, des douleurs épigastriques.

L'on peut atténuer et parfois enrayer ces inconvénients, en ayant soin de faire prendre la médication avec du lait froid.

Dans le second cas, nous verrons apparaître les diarrhées profuses, parfois sanglantes, des crampes intestinales et des lésions ulcéreuses de la muqueuse rectale.

Il semble que les antibiotiques pris par voie buccale détruisent en partie la flore microbienne normale de l'intestin, permettant ainsi à des espèces microbiennes, habituellement saprophytes, de devenir pathogènes.

D'après Kallet et Dalvin, les lésions

*Conférence prononcée devant les membres de la Société Dentaire de Montréal à l'Hôpital du Sacré-Coeur, Cartierville, le 20 janvier 1953.

rectales seraient dues à des champignons.

Quoiqu'il en soit, le Journal de l'Académie des Sciences à New York (vol. 53, art. 2.) rapporte des réactions allergiques dans 56% des cas, réactions qui nécessitent l'arrêt de la médication dans 13% des cas.

La chloromycétine semble moins toxique que l'aureomycine et la terramycine. Tout de même l'on a récemment rapporté quelques cas d'anémie aplastique à la suite de son emploi.

Sulfas

Les composés des sulfas affectent le métabolisme des cellules normales de l'organisme aussi bien que celui des cellules bactériennes. C'est pourquoi, ils donnent une grande variété de réactions toxiques et de réactions d'hypersensibilité.

Avec le sulfanilamide, nous serons souvent en présence de cyanose par formation de méthémoglobine ou de sulphémoglobine au dépens de l'oxyhémoglobine du sang. Cette cyanose est sans lendemain et nécessite rarement l'emploi de l'oxygène-thérapie.

Les nausées, vomissements seront fréquemment observés avec l'emploi de la sulfapyridine. De même la céphalée, l'agitation, la dépression, la confusion mentale chez certains malades peuvent nous faire croire à des psychoses. Tout rentre dans l'ordre avec l'arrêt de la médication.

La température élevée, les érythèmes généralisés sont l'apanage des sulfas. Ces érythèmes peuvent être du type urticarien, du type bulleux, et parfois du type angioneurotique. Ces dermatoses s'observent plus souvent avec le sulfathiazole qu'avec tout autre sulfa. Elles s'accompagnent souvent de conjonctivités et de douleurs articulaires.

La dermatite est quelquefois associée à une stomatite et à des troubles mentaux, donnant un syndrome ressemblant à la pellagre.

L'acide nicotinique à raison de 50 mil. g.i.d. vient à bout de ce genre de réactions.

Plus rarement, l'on rencontre des névrites périphériques, de la thrombocytopénie, pouvant amener du purpura et

des hémorragies importantes et des hépatites toxiques. Enfin, les deux plus grandes complications de l'emploi des sulfas seront: l'agranulocytose et le blocage rénal par précipitation des cristaux de sulfa au niveau des tubules rénaux et des calices du rein.

La granulocytose caractérisée par des frissons, de la fièvre, une stomatite ulcéreuse, des lésions gangréneuses sur tout le corps, d'une leucopénie marquée; une anémie importante se termine souvent par la stupeur, l'infection généralisée et la mort.

Cette réaction allergique apparaît surtout chez les jeunes enfants après dix jours de traitements. Il est sage de ne pas employer les sulfas pour de longues périodes et, si on doit le faire, une surveillance très attentive de la formule sanguine s'impose.

Le blocage rénal peut être évité, si l'on a soin de faire boire beaucoup le patient soumis à la thérapeutique par les sulfas et de lui donner des comprimés de bicarbonate de NA. (5 grammes - par composés de 0.5 gmes de sulfa) afin d'alcaliniser ses urines. La précipitation des cristaux de sulfa n'ayant lieu qu'en milieu acide.

Pénicilline

La pénicilline est certes le moins toxique de tous les antibiotiques. Il ne faudrait pas croire cependant qu'elle est dépourvue de toute toxicité et que l'on peut, sans danger, la prescrire comme une aspirine.

Certaines réactions allergiques à la pénicilline sont dues à des impuretés, au véhicule huileux qui l'accompagne, à la procaine, parfois aux sels de calcium, d'ammonium et de magnésium, d'aluminium, qui entrent dans les préparations commerciales.

Tels seront par exemple, les frissons, l'éosinophilie à 20-30%, la sensation de brûlure au point d'injection, la céphalée, les bouffées de chaleur, la faiblesse, les élancements dans les testicules, les crampes musculaires, la phlébothrombose fémorale, certaines réactions cutanées, les abcès au point d'injection.

Les préparations récentes de pénicilline cristalline en solution aqueuse évitent ce genre d'embêtements. Par contre, il est des réactions propres à la pénicilline, si pure soit-elle. Ainsi la fièvre à 104-105-106 F., une azotémie transitoire, des thrombophlébites, des dermites de contact chez ceux qui manipulent la pénicilline, des érythèmes généralisés, des lésions urticariennes pouvant aller jusqu'à l'oédème de Quincke.

Dans l'oédème de Quincke, ou urticaire géant, le peau et les tissus sous-cutanés participent à la réaction. L'oédème atteint le front, les yeux, les paupières, les lèvres et donnent à la figure, un aspect bour-soufflé.

Avec l'oédème de larynx, la mort peut survenir.

Je vous parlerai enfin de la réaction d'Herxheimer et des stomatites.

La réaction d'Herxheimer au paradoxe thérapeutique est une recrudescence des symptômes aigus de maladie chez un malade chronique à l'occasion d'un traitement.

Ainsi un syphilitique, à la période latente de sa maladie, peut à la suite d'une seule injection de pénicilline présenter plusieurs symptômes aigus de sa syphilis.

S'il s'agit de lésions cutanées ou muqueuses, ce n'est pas grave, mais s'il s'agit d'aorte syphilitique, il peut y avoir oédème au niveau des lésions aortiques et mort subite. Une syphilis nerveuse pourra se compliquer de démence. Une femme enceinte syphilitique, avorter subitement.

Les stomatites à la pénicilline et à d'autres antibiotiques (auréomycine, thyrothricine), sont choses assez fréquentes

depuis l'emploi de gommes à la pénicilline ou de troches.

Les stomatites sont caractérisées par des lésions érythémateuses, ulcéreuses et parfois oédémateuses. Elle sont difficiles à traiter. Aussi ce mode de traitement est très dangereux et son emploi devrait être très limité, pour ne pas dire aboli.

Disons que quelque antibiotique que nous employions, il se développe, tôt ou tard, une résistance bactérienne vis-à-vis ce médicament, surtout si l'on emploie de faibles doses, et que de les employer sans raison majeure, c'est s'exposer à ce que leur action soit nulle lorsque nous en aurons vraiment besoin.

Quel traitement pouvons-nous offrir contre toutes ces réactions allergiques? Bien peu de chose. Tout d'abord l'arrêt de la médication; les antihistaminiques: Benachrylet néo-antergan, 50 milli. T.I.D., qui agissent surtout contre le prurit des lésions cutanées, les antihistaminiques I.V. dans les cas d'oédème de Quincke, les sédatifs, la cortisone: 100 milli. aux 8 heures, dans les cas sur-aigus semble donner de bons résultats.

Vous m'excuserez, Messieurs, si j'ai brossé un tableau un peu sombre des réactions aux antibiotiques. Je ne voudrais en rien diminuer leur valeur, et me sentirais mal à l'aise auprès de maints patients, si je n'en avais l'usage. Mais dans les cas où l'on demande s'il y a ou non intérêt à donner un antibiotique, je crois que l'abstention est prudente et que l'on a pas le droit de dire: "En cas de doute, je vais lui donner de la pénicilline, ça ne pourra pas lui faire de tort."

*Hôpital du Sacré-Coeur
Cartierville*



Nouvelles de l'Association

L'enrégistrement des étudiants pour 1952-1953

L'inscription des étudiants aux études dentaires pour l'année académique 1952-1953 est compilée dans les tableaux ci-dessous.

En 1951-1952, il y avait 755 élèves aux études; cette année, il y en a 719, soit 36 en moins. Le nombre des étudiants a augmenté, il était de 19 et il est maintenant de 20. Les écoles peuvent recevoir un maximum de 212 élèves par classe; ce chiffre n'a pas changé. On a exercé toute la pression possible sur les autorités des facultés pour qu'elles puissent recevoir un plus grand nombre d'étudiants. A date, le seul résultat a été

l'institution d'un cours pour les hygiénistes dentaires, au nombre de dix. A plusieurs reprises, on a démontré aux dirigeants des écoles dentaires l'importance d'établir des cours pour des hygiénistes dentaires.

La province de Saskatchewan continue d'avoir le plus fort pourcentage d'étudiants en rapport avec la population.

Un nouveau tableau a été ajouté, cette année; les chiffres qu'il contient sont plutôt approximatifs, car les facultés ne peuvent pas compiler facilement le nombre des demandes d'admission, qui leur sont faites. Cependant, on peut y noter des renseignements susceptibles d'être utilisés au cours de décisions à prendre.

TABLEAU NO 1

Inscriptions des étudiants dans les facultés dentaires du Canada de 1940 à 1952, inclusivement

Faculté	Dalhousie	McGill	Montréal	Toronto	Alberta	Totaux
1940-1941	31	58	104	210	51	454
1941-1942	25	61	118	232	49	485
1942-1943	25	67	139	270	53	554
1943-1944	22	67	154	255	24	522
1944-1945	28	51	162	264	34	539
1945-1946	27	73	184	180	54	518
1946-1947	38	111	188	340	108	785
1947-1948	37	127	208	435	115	922
1948-1949	41	146	224	478	123	1012
1949-1950	48	147	225	478	136	1034
1950-1951	48	145	196	380	114	883
1951-1952	49	145	140	300	121	755
1952-1953	50	141	111	294	123	719

TABLEAU NO 2

Total des inscriptions des étudiants dans les facultés dentaires canadiennes au 2 janvier 1953

Université	1ère année	2e année	3e année	4e année	hommes	femmes	Total
Dalhousie...	12	12	12	14	45	5	50
McGill...	35	35	37	34	141		141
Montréal...	20	16	20	55	110	1	111
Toronto...	75	82	62	75	283	11	294
Alberta...	30	29	29	35	120	3	123
Totaux...	172	174	160	213	699	20	719

TABLEAU NO 3

Nombre maximum d'étudiants qui peuvent être admis dans une classe

Dalhousie.....	12
McGill.....	35
Montréal.....	60
Toronto.....	65
Alberta.....	30
Total.....	202

TABLEAU NO 4

Total des diplômés de 1940 à 1952, inclusivement

Faculté	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952
Dalhousie.....	12	7	8	11	6	8	0	10	9	6	11	12	12
McGill.....	13	18	9	26	12	13	5	18	15	34	36	37	36
Montréal.....	23	14	31	18	37	30	41	36	38	45	42	69	55
Toronto.....	56	45	40	103	61	58	56	75	24	75	168	152	85
Alberta.....	13	13	32	8	24	7	0	10	13	20	49	25	27
Totaux.....	117	97	120	166	140	116	102	149	99	180	306	295	215

Pour l'année 1952	hommes	femmes
Dalhousie.....	12	0
McGill.....	36	0
Montréal.....	55	0
Toronto.....	85	0
Alberta.....	26	1
	214	1

TABLEAU NO 6

Etudiants supplémentaires

	Dalhousie	McGill	Montréal	Toronto	Alberta	Totaux
*Etudiants diplômés 1952-53.....	0	0	2	12	0	14
**Etudiants post-scolaires 1952-53.....	0	0	2	5	0	7
***Etudiants passagers 1952-53.....	0	0	61	131	0	192
Hygiénistes dentaires aux études durant 1952-53...	0	0	0	11	0	11

*L'expression "étudiants diplômés" signifie les dentistes inscrits à l'Université dans l'Ecole pour Diplômés et qui suivent un cours, qui donne droit à un titre.

**L'expression "étudiants post-scolaires" signifie les dentistes inscrits dans une faculté dentaire pour y suivre un cours qui donne droit à un titre ou à un diplôme.

***L'expression "étudiants passagers" signifie les dentistes inscrits dans une faculté dentaire pour y suivre un cours de courte ou de longue durée, ne donnant pas droit à un titre ou un diplôme.

TABLEAU NO 7

Statistiques au sujet du nombre des étudiants canadiens aux études dans les facultés dentaires du Canada en rapport avec la population de leur province d'origine

Etudiants venant de	Pourcentage des étudiants	Proportion des étudiants en rapport avec la population*
Terre-Neuve.....	1.39	1/36,142
Ile-du-Prince-Edouard.....	0.97	1/14,061
Nouvelle-Ecosse.....	4.45	1/20,081
Nouveau-Brunswick.....	3.06	1/23,441
Québec.....	22.11	1/25,507
Ontario.....	36.72	1/17,415
Manitoba.....	3.34	1/32,356
Saskatchewan.....	8.34	1/13,862
Alberta.....	8.34	1/15,658
Colombie britannique**.....	4.87	1/33,292

*Les chiffres des populations sont ceux fournis par le Bureau des Statistiques d'Ottawa, pour 1951.

**Les étudiants faisant leurs études aux Etats-Unis résident surtout dans la province de Colombie britannique. Ces étudiants ne peuvent être compris dans ce tableau, qui, par ce fait, ne donne pas une idée juste du nombre des étudiants de cette province.

Note: Environ 40 étudiants canadiens font leur études aux Etats-Unis, chaque année; comme on ne peut connaître leur province d'origine, il est donc impossible de les inclure dans ce tableau.

TABLEAU NO 8

Nombre des demandes d'admission aux études dentaires par des candidats qualifiés

Université	1945 demandes	1946 demandes	1947 demandes	1948 demandes	1949 demandes	1950 demandes	1951 demandes	1952 demandes
Alberta.....	26	59	27	44	50	45	37	40
Toronto.....	251	?	?	410	290	239	223	206
McGill.....	87	104	190	165	142	124	118	50
Montréal.....	157	108	137	135	140	112	72	107
Dalhousie.....	?	?	?	?	?	?	?	25

TABLEAU NO 5

Lieu d'origine des étudiants, par province ou pays étrangers, dans les facultés dentaires canadiennes au 2 janvier 1953

Faculté	Terre-Neuve	Ile-du-P.E.	Nouvelle-Ecosse	Nouveau-Brunswick	Québec	Ontario	Manitoba	Saskatchewan	Alberta	Colombie britannique	Etats-Unis	Indes occidentales	Bermudes	Nigérie	Europe	Australie	Angleterre	Totaux
Dalhousie.....	7	2	30	10												1		50
McGill.....	3	2	1	5	67	13	6	9	2	9	15	5	2		2			141
Montreal.....			1		92	1		1			9				2			111
Toronto.....		3		2		250	13	10		12					1	1	2	294
Alberta.....							5	40	58	14		1		1	4			123
Totaux.....	10	7	32	22	159	264	24	60	60	35	24	6	2	1	9	2	2	719

Le gouvernement de la Colombie britannique rejette le projet de loi des techniciens

La Législature de la Colombie britannique s'est rendu à la demande de son Comité des Bills privés pour rejeter le

projet de loi des techniciens, comme n'étant pas dans le meilleur intérêt de la population.

Cette loi aurait créé une profession de techniciens dentaires, pouvant transiger directement avec le public. A une séance

du Comité des bills privés du Gouvernement de la Colombie britannique, tenue le 5 mars dernier, le bill en question fut jugé au mérite après l'étude de divers mémoires. L'avocat de la Société des techniciens dentaires de la Colombie britannique soutint que le projet de loi avait comme unique but, humanitaire et chrétien, de fournir des prothèses aux travailleurs à des conditions pécuniaires raisonnables.

Trois mémoires furent présentés pour s'opposer au bill:

- 1) Le Collège des Chirurgiens-Dentistes de la Colombie britannique, par l'entremise de son avocat, alléguait qu'il ne pouvait approuver un projet de loi qui serait en contradiction avec la loi dentaire actuelle; de plus, que la prothèse n'appartenait pas au domaine des techniciens et qu'en définitive, une telle loi changerait les rôles, c'est-à-dire, que le technicien se trouverait ainsi à embaucher le dentiste au lieu que le dentiste retienne les services du technicien.
- 2) L'Association Dentaire Canadienne, par la voix de son secrétaire, définit les qualifications du technicien dentaire comparées à celles du dentiste, en s'appuyant sur l'histoire et les coutumes du monde entier; ensuite, alléguait une liste de raisons spécifiques pour condamner le bill.
- 3) L'Association des Laboratoires Dentaires de la Colombie britannique, représentée par son avocat, fit valoir son opposition irrévocable à toute mesure de ce genre.

Le projet de loi constituait un réel défi à l'exercice de la chirurgie dentaire et il est consolant de voir que le Gouvernement de la Colombie britannique a réalisé

les désavantages sérieux d'une législation semblable au détriment du public.

Impôt sur le Revenu et la prothèse

Dans certaines localités, des préposés à l'impôt sur le revenu n'ont pas voulu accepter les reçus de dentistes pour des travaux de prothèse en déduction de l'impôt sur le revenu. Les règlements de l'impôt permettent la déduction de toute note d'ordre médical touchant le médecin, le dentiste ou la garde-malade qualifiés pour exercer à l'endroit où les dépenses ont été faites.

Un amendement à la loi alloue maintenant la déduction de sommes déboursées pour des membres artificiels, des corsets pour la colonne vertébrale, des appareils pour des membres, des appareils acoustiques ou des chaises roulantes. Comme les prothèses dentaires n'étaient pas mentionnées dans cet amendement, quelques préposés à l'impôt sur le revenu ont pensé que cet item ne pouvait être déduit. La chose fut discutée avec le Ministre et on put obtenir un éclaircissement satisfaisant à ce sujet.

Le texte ci-après est un paragraphe d'une lettre reçue du Ministère du Revenu National:

"Vous vous souvenez de notre conversation à Ottawa le mois dernier et de notre discussion pour savoir si un reçu de dentiste remis à un patient pour des dentiers pouvait être considéré, d'après les termes de la loi, comme dépense médicale.

Après avoir étudié la question, je puis vous dire que les déboursés faits pour la confection de pièces de prothèse peuvent être considérés comme dépenses médicales, à condition toutefois que les spécifications de la section 26 (b) (i) soient respectées."





PLACE D'ARMES VUE D'UN PORTAIL DE L'EGLISE NOTRE-DAME

**Congrès conjoint de
L'ASSOCIATION DENTAIRE CANADIENNE
ET DU MONTREAL DENTAL CLUB**

sous les auspices du

Collège des Chirurgiens-Dentistes de la Province de Québec

les 18, 19, 20 et 21 octobre 1953

Pensez-y dès maintenant

On peut s'inscrire tout de suite, en envoyant le montant de l'inscription, soit \$15.00, payables au Montreal Dental Club, aux soins du Dr D. B. Ward, secrétaire du Congrès, suite 309, 1414 rue Drummond, Montréal.

Horaire du Congrès

samedi, le 17 octobre

- | | |
|--------------------|---|
| Joute de football— | Université McGill vs University of Western Ontario. (Retenir ses sièges directement au Bureau Athlétique, Université McGill, Montréal.) |
|--------------------|---|

dimanche, le 18 octobre

- | | |
|-------------------|----------------|
| Hôtel Mont-Royal— | Enrégistrement |
| | Concert |

lundi, le 19 octobre

- | | |
|---------------------------|---|
| Hôtel Mont-Royal— | Enrégistrement |
| — | Cliniques de tables |
| — | Exposants |
| — | Association Dentaire Canadienne—déjeuner—réunion annuelle |
| — | Conférences |
| réunions de condisciples— | (les secrétaires des différentes classes d'anciens des Universités McGill et de Montréal sont priés d'organiser ces réunions) |

mardi, le 20 octobre

- | | |
|-------------------------|--|
| Hôtel Mont-Royal— | Enrégistrement |
| — | Conférence |
| — | Programme d'énergie atomique |
| — | Exposants |
| — | Cliniques de groupes |
| Université de Montréal— | Faculté de chirurgie dentaire |
| — | Cliniques de groupes |
| — | Cliniques au fauteuil |
| — | Cliniques de tables |
| — | Expositions scientifiques |
| Hôtel Windsor | Dîner du président—danse—offert par le Collège des Chirurgiens-Dentistes de la Province de Québec. |

mercredi, le 21 octobre

- | | |
|-------------------|----------------------------------|
| Hôtel Mont-Royal— | Exposants |
| — | Conférences |
| — | Cliniques de groupes |
| — | Déjeuner du Montreal Dental Club |

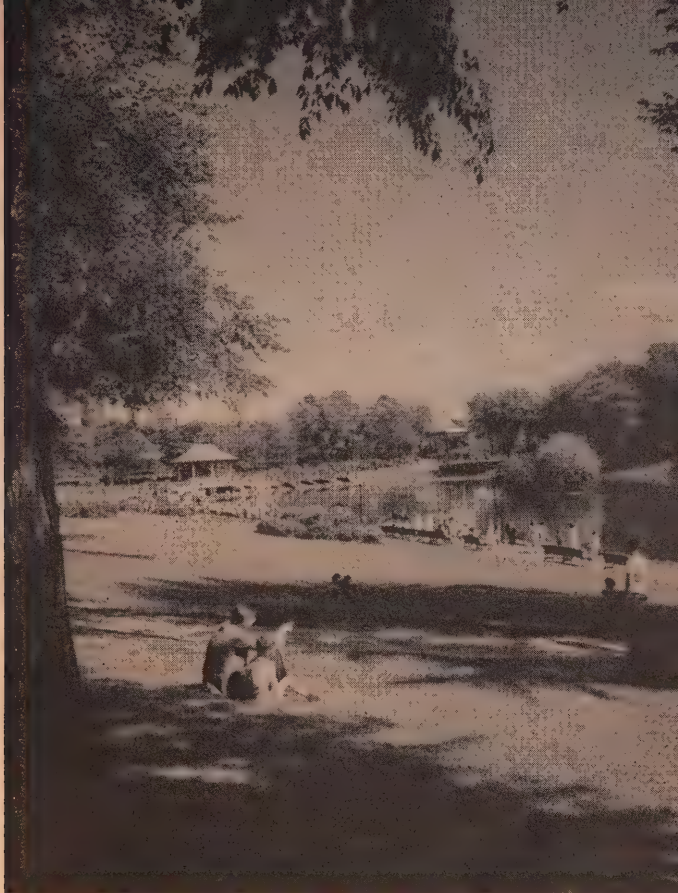
Programme des dames

- | | |
|---|-----------------------------|
| — | Réception |
| — | Thé au Chalet du Mont-Royal |
| — | Déjeuner |
| — | Danse |

Association Canadienne des infirmières et des assistantes dentaires

- | | |
|---|--|
| — | Septième réunion annuelle, conjointement avec la dix-neuvième réunion annuelle de l'Association des Infirmières et des Assistantes dentaire de Montréal. |
|---|--|

Pour renseignements: Mlle Lois Winters, organisatrice du Congrès, a/s Dr. J. C. Flanagan, 1224 Ste-Catherine ouest, Montréal.



Lafontaine Park in Montreal's east end, one of many beautiful parks situated in Canada's metropolis. Lafontaine Park is laid out very much in the French traditional manner.

Credo for Canadians

I believe in Canada,
A land endowed by God with the richness of His bounty,
Founded by our forefathers as a land of promise and a home of freedom,
And built by their sweat and their toil;
A land wherein two great streams of culture met and mingled to form a nation,
Now consecrated by the blood of its sons who lie in far-off foreign fields.
I believe in Canada,
A priceless heritage that is ours to guard and keep, and pass on untarnished,
So that our country may fulfill its destiny for the benefit of our children and their
children,
And for the greater good of mankind in the ages yet to come.

(From an address by T. D'Arcy Leonard, Q.C., President of The Canada Permanent Trust Company).



PHOTO BY KARSH

BORN TO GREATNESS

HER MAJESTY QUEEN ELIZABETH II

"God Save the Queen"

The Journal

OF THE CANADIAN DENTAL ASSOCIATION

VOL. 19

TORONTO, JUNE, 1953

No. 6

Local Anaesthesia of the Teeth, Mouth and Jaws*

by ROY F. WEST, D.M.D., F.I.C.D., Seattle, Washington

IN ORDER to obtain satisfactory results in local anaesthesia injections, it is most important to use the correct local anaesthetic solutions. The solution should be freshly prepared, the proper procaine percentage, correct vaso-constrictor, and with the pH near that of the tissue; 7.35 to 7.4. The vaso-constrictor should vary according to the condition of the patient and type of operation to be performed.

REQUIREMENTS FOR PREPARATION OF ANAESTHETIC

The following is an outline for preparing such an anaesthetic. In the preparation and dispensing of a freshly prepared alkaline procaine hydrochloride solution, the following agents are required.

1. Procaine hydrochloride crystals.
2. Triple distilled water (pyrogen free) in 1000 cc. vaculators.
3. Sodium bicarbonate.
4. Epinephrine.

Equipment:

1. One 500 cc. Erlenmeyer flask for procaine solution. (Mark at 8 ounce and 16 ounce levels with a Joe Dandy stone)
2. One 4 ounce graduate measure marked in ounces.
3. Three coloured dropper bottles (dropper graduated to mms. one 4 ounce, one one ounce and one ½ ounce.

4. Procaine crystals weighed out into 35 gr. powders for 2% solution, 42 gr. for 2½% solution, or 54.6 gr. for 3% solution. This is for 4 ounces of the distilled water.
5. Sodium bicarbonate weighed into powders of 18 gr. These powders should be kept in a glass jar with ground stopper to be air tight.
6. Adrenalin chloride: 1 cc. ampoules—1 to 1000 to be diluted to 1 to 2000 with the distilled water.
7. Luer type syringes — 3 cc. and 4 cc.
8. Needles, stainless steel—27 gauge 1 inch; 26 gauge 1¼ inch; 25 gauge 1½ inch.
9. A stainless steel sterilizer of the smaller type should be used for boiling of needles, syringes and bottles.

PREPARATION OF THE SOLUTIONS†

Procaine:

Pour water from vaculator into the Erlenmeyer flask to slightly above the mark desired, now add the correct amount of procaine crystals for the water used and boil for ten minutes or more. With the Erlenmeyer flask the solution can be boiled over a Bunsen burner. It must be boiled down to the mark.

When autoclaving, fill exactly to the mark and add the correct amount of

†Recognition is given to Dr. Foote and to Dr. Husband for their research on this solution.

*Presented before the Victoria Dental Society, Victoria, B.C., April 18, 1953.

powder. Autoclave to 15 pounds, turn off but do not exhaust. Allow autoclave to cool and remove solution at once. This will give a 2%, 2½% or 3% solution according to the amount of crystals used. This is a very stable solution.

Sodium Bicarbonate:

Use chemically pure product made up into powders of 18 grains each. Take one of these powders and pour into a dry test tube. Cover end with a sanitab cap or with a piece of rubber dam held over open end of test tube with a rubber band. Now place this in autoclave and raise pressure to 15 pounds. Let cool and remove tube but do not remove rubber cap until the tube is cold. This is really the only way sodium bicarbonate can be sterilized.

Take the one ounce dropper bottle after it has been thoroughly sterilized and fill with sterile water, then add the sodium bicarbonate from the test tube. Place the cap with the dropper pipet on the bottle. It is now ready for use. This solution should be prepared fresh at least once a week.

Epinephrine:

Take two ampoules of 1-1000 adrenalin chloride and extract contents with a sterile syringe and place in the ½ ounce dropper bottle, then add two cc. of the sterile distilled water. This gives 4 cc. of 1-2000 adrenalin chloride. Note that the dropper should be graduated to a minim i.e. the lumen of the glass. Discard any droppers that are not accurate.

FILLING THE SYRINGE

1. Hold syringe in the left hand between the thumb and index finger.
2. Remove plunger and place between the third and little finger.
3. From the procaine dispensing bottle fill the syringe from the open end to the 2 cc. or 3 cc. depending on the amount required.

4. From the adrenalin chloride bottle (1-2000) add one drop for each 2 cc. of procaine solution. (This makes a 1 to 64,000 adrenalin content. One drop in 3 cc. of procaine will give 1 to 96,000.)
5. From the sodium bicarbonate (NaHCO_3) bottle add one drop for each cc. of procaine solution, for either 2-2½ or 3% solution.
6. Insert plunger and invert to expel the air; now the syringe is of 1 to 65,000 and pH varying from 7.35 to 7.45. Once the ingredients are mixed do not let it stand. The syringe should be filled just before it is used to make the injection. This is a very important point. Having filled the syringe, tops of all dropper bottles should be screwed on securely.

The above prescription is based on triple distilled water (pyrogen free) which may be obtained from any medical supply house, in vacuators. The Luer type syringe 3cc. or 4 cc. is preferred. It is light in weight, easy to handle and manipulate. The operator can see what is being injected, a bubble can be detected easily and expelled. Either the regular Luer or Luer lock is good. The needle is left on the syringe, never removed or changed until discarded. To remove the needle, warm the hub over the Bunsen burner. If the syringe is accidentally fractured the glass tip can easily be removed from the needle hub by warming the hub over the Bunsen burner and plunging in cold water. Do not heat the shaft of the needle or it will withdraw the temper and spoil it. Keep the needle sharp at all times. It is possible to make any stainless steel needle sharper than when new.

SHARPENING OF NEEDLES

To sharpen these needles use a mounted stone the size of a dime. We use a J. Byrd Moyer sharpening stone, No. 17. Place the shank of the stone in the straight handpiece. The needle must be on the syringe to sharpen easily. Hold the handpiece in the right

hand, with palm grasp. Hold the syringe in the left hand, palm grasp, with the palm of the left thumb resting against the shaft of the needle about a half inch from the point. Place the ends of the thumbs together, at right angles. This will bring the stone at the correct position on the bevel of the needle point. Turn the stone away from the point and hold rigid. This concaves the bevel, or hollow grinds it. Hold firmly and there will be a definite bevel (Fig. 1A). The length of the bevel depends on the size of the needle shaft; the larger the shaft, the longer the bevel should be after grinding a definite concave bevel.

Change to a Novol hone, which is made of bakelite and emery with a V shaped slot in it. Draw the needle, bevel up, away from the point a few strokes, then turn bevel down. Hold the needle at a 45 degree angle and slide it back and forth a half dozen times. All that touches in the V of the hone is the cutting edge, and this does not disturb the concave or hollow ground effect of the bevel (Fig. 1B). Take a small smooth broach and insert it in the lumen of the needle as far as it will go, to remove the metal that may be across the lumen due to the revolving stone. Test the keen edge of the needle by inserting it in the callous of the palm of the hand. It should cut through without force.

Use care when placing the syringe with needle in the sterilizer or glass receptacle; do not strike the end as this will dull it. The needle should cut through the tissue and not have to be pushed through by blunt dissection. There should be very little pain if the needle is properly inserted into the tissue. Use small needles, especially when using the one inch needle. This is the shortest needle we use and should not be larger than 27 gauge. This is used for subperiosteal injections and for injecting into the posterior palatine canal to anaesthetize the posterior superior alveolar nerve. It is also used for the infraorbital in-

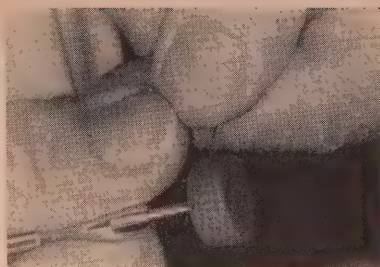


FIG. 1A—Sharpening of needle.



FIG. 1B—Sharpening of needle.

jection and in some cases for tuberosity or zygomatic injections. It is also used for making mandibular on children and for mental injections.

The next length used is a one and one-quarter inch, twenty-six gauge. This is used for mandibular on older children and small adults, also for some tuberosities and infraorbitals.

The longest needle we use is a one and one-half inch, except at times when making a posterior palatine second division injection, at which time a twenty-five gauge two inch needle is used. The twenty-five gauge one and one half inch needle is used routinely for mandibular injections.

An infiltration or subperiosteal is a very important local anaesthetic injection. It is abused, however, by most operators. The tendency is to insert the needle and inject, insert again and withdraw after injecting some more, and so on and on. Each insertion of the needle causes pain to the patient. There is a definite technique for this injection.

ANAESTHETIZING UPPER BICUSPIDS

To anaesthetize the upper bicuspid: Take a 3 cc. Luer type syringe with a twenty-seven gauge needle, withdraw the plunger and hold between the fingers, then place 2 cc. of three per cent procaine solution in the open end of the syringe with the glass pipet. From the sodium bicarbonate one ounce bottle drop two drops into the syringe. From the one-half ounce epinephrine bottle drop one drop into the syringe. From the one half ounce epinephrine bottle drop one drop into the syringe. The syringe now contains 2 cc. of procaine, three per cent, two drops of sodium bicarbonate, which makes a solution with a pH of 7.4, and epinephrine, one to sixty-five thousand. This is the nearest to a perfect solution yet devised.

Now warm the barrel of the syringe with hot water or over the Bunsen burner, being careful not to contaminate the needle. Wipe the soft tissue over the bicuspid with sterile gauze and wipe this dry tissue with metaphen or three per cent iodine solution. Place the needle against the soft tissue above its attachment to the gum tissue. Take the lip between the thumb and finger and pull down, which pulls the soft tissue over the point of the needle without pain. Now inject one half cc. of the solution. The needle must not come in contact with the external plate at this time. The soft tissue may balloon slightly; this does not matter. Withdraw the needle and massage the face over the area. While waiting for superficial anaesthesia to take effect, you may make the palatal injection. This is not as easy to do painlessly. Wipe the area with sterile gauze and apply antiseptic solution. Insert the needle about a half inch above the gingival border of the second bicuspid on the palate surface of the soft tissue. Place the point of the needle gently against the soft tissue and with a twisting motion, using pressure with the point of the needle, also keep pressure on the piston of the syringe so some solution

will be deposited the instant the point enters the soft tissue. Inject about ten minims. This is sufficient to anaesthetize the palate tissue opposite the bicuspid.

The mucoperiosteum on the buccal of the bicuspid will now be anaesthetized sufficiently to permit the subperiosteal injection. Wipe the soft tissue again with gauze and apply the antiseptic solution. Insert the twenty-seven gauge needle at right angles to the surface between the bicuspid where the cheek or lip joins the gum. Insert until the external plate is felt with the point of the needle, then drop down with the syringe keeping pressure on the needle. The idea is to insert the needle at the most acute angle. Keep digging into the process as the needle advances, keeping pressure on the piston and expelling some solution, thus preventing pain as the needle is inserted. When opposite the apices of the bicuspid the needle should be so tight that it will not be pulled out by the weight of the syringe and its contents. Inject one cc. of solution slowly. There should be no ballooning of the soft tissue. It requires some pressure on the piston to expel the solution. This should produce profound anaesthesia of the two upper bicuspid for cavity preparation, pulp extirpation or extraction.

ANAESTHETIZING THE CUSPIDS, LATERALS AND CENTRALS

To anaesthetize the cuspids, the same technique is used, except the needle is inserted farther as the root is longer. It is better to inject distal to the cuspid when possible. Always inject in the concavity between the roots, never over the convexity. To anaesthetize the upper lateral and central incisors, inject between them, using the same technique as between the bicuspid.

In older patients, at times you will have difficulty anaesthetizing the upper cuspids, as the external plate over it is heavy and dense with few, if any, minute openings in it. If you have

no success obtaining profound anaesthesia, you will have to resort to intraosseous or infraorbital, the technique of which will be explained later.

It is possible to anaesthetize the lower centrals and laterals with the subperiosteal technique if the patient is not too old. Use the same technique as described for the upper bicuspids. The important thing is to keep the point of the needle tight against the external plate. It requires quite a pull to withdraw the needle.

The infiltration or subperiosteal injection is used to anaesthetize the upper bicuspids and incisors, lower anteriors on young persons, and all upper deciduous teeth; also to anaesthetize all soft tissues of the mouth and jaws.

TUBerosITY OR ZYGOMATIC INJECTIONS

This injection is being displaced by the posterior palatine injection. The technique for the zygomatic, or tuberosity, is to use a one and a quarter inch twenty-six gauge needle. Fill the syringe with two cc. of the procaine solution, wipe the buccal soft tissue over the upper second molar and apply the antiseptic solution. Insert the needle over the distobuccal root of

the second molar where the cheek joins the gum. Keep the syringe and needle parallel with long axis of the second molar root. Deposit some solution as the needle enters the tissue. The needle should strike the external plate soon after entering the tissue. Keep the syringe well out so the point will slide along the external plate as it goes up. Keep depositing solution as the needle enters. The needle should go upward and inward but not backward, about an inch from where it entered. It should be tight as in the subperiosteal injection. The point of the needle will be anterior to the posterior dental foramen or canal, but the results will be excellent. (Fig. 2.)

With this technique you are not so liable to get a haematoma. It is necessary to inject a few minims on the palate near the posterior palatine canal to anaesthetize the soft tissue on the palate. This injection produces complete anaesthesia of the second and third molars for operative work or extractions. In order to obtain complete anaesthesia of the first molar, it is necessary to make a subperiosteal injection over the mesial buccal root. This root is enervated by a branch from the middle superior alveolar



FIG. 2—Tuberosity injection.

nerve. If you make this subperiosteal injection for the bicuspid, you will have profound anaesthesia of the molars and two bicuspid.

The posterior palatine injection has just about replaced the tuberosity or zygomatic injection.

TECHNIQUE OF POSTERIOR PALATINE INJECTION

With a one inch twenty-seven gauge needle and two cc. of solution, you are ready to make this injection. Wipe the palatal tissue over the lingual root of the second molar with gauze, then with the antiseptic solution while the patient opens wide. Insert the needle about half way up along the alveolar surface between the palatal roots of the first and second molars. (Fig. 3.) As the needle enters the tissue inject a few drops of solution. The angle of the needle is upward and backward. If the needle strikes the palatal bone, withdraw slightly but not out of the tissue, tip the syringe at a different angle and rotate needle and syringe. Move the point of the needle as much as you can without withdrawing from the tissue. Inject only a few drops of solution at this point, enough to prevent pain while locating the foramen.

Excess solution at this point causes more gagging.

If unable to locate the opening of the posterior palatine canal, you will have to withdraw the needle from the tissue and insert in another place. Proceed in the same manner until the needle enters the canal. Insert the needle about three-quarters of its length in the tissue, which will leave the needle about a half inch within the canal. At times the needle will strike an obstruction, if so withdraw slightly and rotate, then try again. You can usually get by the obstruction with this technique. When the needle has entered the canal the three-quarters of an inch, inject about one and a quarter cc. of the solution. Inject the remaining solution over the bicuspid if you are anaesthetizing the five teeth. If the three molars are being injected, use one half cc. over the mesial buccal root of the first molar. If you are anaesthetizing the second and third molars only, the posterior palatine injection is sufficient.

This is an excellent injection and it is very easy to sterilize the area of the needle insertion. It is the only injection we make that the needle does not pierce through muscle tissue. It is also



FIG. 3—Posterior palatine injection.

possible to anaesthetize the entire side to the median line, including the eight upper teeth on that side. The only difference in the technique is to use a two-inch needle and enter the canal at least an inch and a half and deposit four cc. of the solution. This anaesthetizes the second or superior maxillary division of the fifth nerve, the antrum and entire superior maxilla on that side including the teeth.

This is an excellent injection where there is swelling, infection and pus present over the molars or bicuspid. In other words, in the area of needle insertion for the tuberosity or subperiosteal. The reason for the volume of four cc. of the solution is that the second division of the fifth nerve runs across the upper part of the sphenopalatine fossa and it requires a volume to anaesthetize it.

There is very little stimulation following this injection. At times the patient does experience some gagging and occasionally a choking sensation when both sides are injected at the same sitting. As I have stated before, do not inject much before entering the posterior palatine canal. This causes the gagging more than the solution deposited in the canal. The middle palatine nerve that comes through the accessory canal which is posterior to the posterior palatine canal is the nerve that enervates the soft palate and uvula.

The patient may complain of diplopia or double vision on the side of the injection. This usually passes away in about thirty minutes. The patient may complain of a bitter taste and cough. This is caused by the needle going through the side of the canal and solution being deposited in the posterior naris. Try withdrawing the needle a few mms. and inject some more. Many times the solution will stay in the canal and produce the anaesthesia. If not, withdraw the needle more and try going up the canal at a different angle, rotating the needle. This will usually overcome the diffi-

culty, but if not the zygomatic injection will have to be resorted to.

At times when the needle goes through the side of the canal, it causes a nose bleed. Do not be alarmed, as it will not amount to anything. You must assure the patient there is no cause for worry. Withdraw the needle slightly and make the injection or try inserting it again at a different angle or after rotating the needle. If the needle meets an obstruction, do not try to rotate without withdrawing slightly or there may be danger of twisting the needle and it may fracture. There is really very little danger of a needle fracture in making this injection. However, the injection is made within the arch and it is possible for the patient to suddenly bite down and fracture the needle. It is a good technique to hold the forefinger and middle finger of the left hand between the teeth to hold the bite open if they should suddenly close, to permit withdrawal of the needle to prevent a fracture. Very little pain is caused in making this injection and with a little practice there will be no difficulty in locating the canal. It is an excellent injection.

THE INFRAORBITAL INJECTION

This injection is used to anaesthetize the upper anterior teeth for extraction and surgery. It is particularly indicated in case of acute infection where there is pus present and swelling in the area of the infiltration or subperiosteal needle insertion. It is possible to make this injection, which is distal to the anterior teeth and away from the swelling and pus.

TECHNIQUE OF INFRAORBITAL INJECTION

To anaesthetize the patient's right side, place the forefinger of the left hand on the infraorbital ridge under the right eye. Now drop the point of the finger down below the infraorbital ridge and palpate for the infraorbital foramen. It can be located in most patients. While holding the finger in this position, raise the lip with the

thumb. Wipe the soft tissue with the gauze and apply the antiseptic solution. Take a syringe with two cc. of solution and a one-inch twenty-seven gauge needle or a one and one-fourth inch twenty-six gauge needle, and start inserting the needle in the soft tissue over the second bicuspid, high up and away from the bone (Fig. 4.) Keep the needle and syringe as near right angles to the external plate as possible. Span across the canine fossa endeavouring to have the point of the needle strike the external plate under the point of the forefinger. Many times it will enter the infraorbital foramen. It is good technique to have the point of the needle strike slightly to the distal under the point of the finger and then step it slightly mesially and many times it will drop into the foramen.

If it does not drop, it is quite sure to be in the foramen. Always inject some solution as soon as the tissue is entered and there will be very little pain from the injection. When the needle appears to be in the foramen, inject a cc. or a little more, always keeping the point of the finger tight over the foramen especially while in-

jecting. The anaesthetic solution has to enter the infraorbital canal at least five millimeters to reach the anterior superior alveolar nerve which supplies or enervates the cuspid lateral and central, their pulps and the soft tissue and bone around their roots. This is an excellent injection when indicated. It is seldom used however, for cavity preparation, because at times it causes a haematoma and a black eye. A black eye following a cavity preparation is difficult to explain. The patient will say, "Look at me and he only injected to prepare a cavity." If they have had teeth extracted they think there is more reason for the black eye.

If these techniques of injection are learned and practised, the operator will soon be able to anaesthetize all upper teeth, their pulps and bone around their roots. If for some reason, it seems to be impossible to anaesthetize a tooth for extraction, cavity preparation or pulp extirpation, there is still another injection to fall back upon—the intraosseous.

INTRAOSSIOUS INJECTION

I learned this injection from Dr. Tim Otteson of Oslo, Norway. He gave



FIG. 4—*Infraorbital injection.*

a two-week course in Seattle, Washington in 1914. This technique, the intraosseous, is used to anaesthetize a tooth or teeth when all other techniques have failed. It is to put the solution through the external plate by drilling a hole through the plate with a beutelrock drill the same size as the needle. This injection is usually a subsequent one. The regular injections have failed and are then followed by the intraosseous. There will be no pain during the drilling as the regular injections will have anaesthetized the tissue to that extent.

A contra-angle beutelrock drill is used in the straight handpiece. This will give better control. It is started between the teeth, either mesial or distal to the teeth to be anaesthetized, depending upon the amount of space. The drilling is usually done on the side with the most space. If the approximating tooth is missing, the drilling is done on the crest of the ridge near the tooth to be anaesthetized, being careful at all times not to strike the root with the drill. If the drill did strike the root, it would be a glancing blow as the drilling is done parallel with the long axis of the root.

The drill is started through the

mucoperiosteum into the cortical bone, being careful not to involve the free margin of the gum (Fig. 5.) Drill until cancellous bone is reached; the drill will drop. Withdraw and a drop of blood will ooze out. Insert the needle in the hole. It should fit tight. Inject about ten minims slowly. There should be a slight pressure required to expel the solution, about like that required to make a subperiosteal injection. If there should be some leakage around the needle, take a piece of gauze and fold a few times and press hard against the needle at the gum while injecting. Many times this will permit enough solution to enter to produce profound anaesthesia. This only takes a few minims. Use care not to inject more than ten minims or the patient will be stimulated. In fact, there is more stimulation following an intraosseous injection than from any other. It also produces the most profound anaesthesia immediately with no waiting. The cancellous bone is highly vascular and the anaesthetic is taken up quickly.

THE MANDIBULAR INJECTION

The mandibular injection is a very important one, as it is the only one



FIG. 5—Intraosseous injection.

whereby you may anaesthetize the lower molars except by intraosseous.

The mandibular injection properly made anaesthetizes the entire side of the mandible to the median line, except possibly the long buccal nerve, which requires an extra injection about half the time, to anaesthetize the gum and mucoperiosteum on the buccal of the molars posterior to the mental foramen. Three different size needles are used, depending on the size of the patient. For small children, use a twenty-seven gauge one-inch needle; for larger children and small individuals use a twenty-six gauge one and one fourth inch, and for regular patients use a twenty-five gauge one and one-half inch needle.

The most important part of the technique of the mandibular injection is the correct place of starting the needle. The proper height and exact area is important and the angle at which you hold the syringe. It is usually over the bicuspid on the opposite side of the mouth. The landmark for starting the needle is the apex of the buccal pad of the cheek. The apex in the soft tissue points distally and is the correct height for starting the injection. There is a slight concavity

just below this apex. (Fig. 6.)

After having wiped the area with gauze, it is then wiped with the cotton applicator dipped in iodine or metaphen. Have syringe filled with three cc. of the correct percentage of procaine, correct vaso-constrictor and proper pH for the operation to be performed. Always warm the solution.

Place the tip of the left forefinger on the anterior of the ramus, not to measure anything, but to help hold the cheek back and to put pressure on the ramus as the needle enters the tissue. If heavy pressure is put on the ramus with the finger and as the needle enters the tissue the pressure is eased up slightly, the needle will enter painlessly. It must be very sharp, however. As the needle enters, expel some solution and keep expelling slowly as the injection is being made. This prevents pain from the needle and anaesthetizes the lingual nerve. At times the needle strikes the lingual plate of the ramus after entering only a half inch. If this occurs, step the point distally carefully to prevent pain; the periosteum covering the bone is highly enervated and is painful if pierced unnecessarily.

Keep stepping distally very care-



FIG. 6—Mandibular injection.

fully, and it should drop over the edge of the mandibular sulcus and go in one-fourth to one-half inch and strike bone again. If you are in the tissue about an inch and have entered at the correct height and angle, you are in the mandibular sulcus and the point of the needle is resting against the posterior wall. You will find that it is impossible to insert the needle further. Deposit two cc. at this point, and you will have profound anaesthesia of the side.

At times you will not strike the lingual plate of the ramus, but will continue on an inch or so and strike the posterior wall of the sulcus. The result will be just as successful. You may be unable to strike the posterior wall of the sulcus. There does not seem to be any. I have seen mandibles without a sulcus, only a foramen the size of the inferior alveolar canal. When you are unable to strike the posterior wall of the mandibular sulcus; in other words, the needle keeps on going, you will withdraw after having injected some solution so it will be painless when you insert again. Try a different position or angle and slightly higher. If it is impossible to locate the distal wall of the mandibular sulcus, you will have to make your injection higher so the solution is deposited around the nerve before it enters the mandible. After making the mandibular injection, wait a few minutes before making the long buccal and there will be less pain. Many times the long buccal is not needed as the mandibular injection will anaesthetize it.

To make the long buccal injection, insert the needle in the cheek opposite the occlusal plane of the second molar. If the operation is on the third molar, start the needle slightly distal to the second molar. If the first molar is to be removed, inject opposite it. Do not start the needle down in the vestibule or trough and slide under the periosteum. Never strike bone in making a long buccal injection. Keep the needle parallel with the surface

of the cheek. Do not insert the needle at right angles to the surface. It is not necessary to enter the buccinator muscle. This injection anaesthetizes the mucoperiosteum and gums of the buccal of the lower molars and occasionally the buccal gum of the upper molars.

To make a mandibular injection on the patient's left side, place the left arm around the back of the head and with the tip of the left forefinger on the left anterior border of the ramus, proceed as on the patient's right side.

The mental injection is an excellent one when indicated.

TECHNIQUE FOR MENTAL INJECTION

Use a one-inch twenty-seven gauge needle with two cc. of solution in the syringe. Inject one half cc. of solution in the soft tissue in the area of the mental foramen. This makes it possible to explore for the mental foramen with the point of the needle with very little pain. The mental foramen is usually near the apices of the lower bicuspid roots about half way between the gingival surface of the bicuspid and the lower border of the mandible.

Have patient bite teeth to near occlusion. Wipe area over foramen and apply antiseptic solution. Hold the lip down with the thumb and forefinger. Hold syringe at right angles to the external plate of the jaw. Start the needle at right angle to the plate where you think the foramen is located (Fig. 7.) Many times it will enter the foramen, but usually not on the first attempt. If not, step the point of the needle as far as possible in all directions without removing it from the tissue. If you are not successful, you must withdraw and try another location and proceed in the same manner. Do this until you feel the needle drop in the foramen. If you proceed carefully there will be very little pain.

With the point of the needle in the foramen, inject slowly about one-half cc. of solution. If you inject more you may stimulate the patient. This is an



FIG. 7—Mental injection.

excellent injection for the lower bicuspids, cuspid and incisors. For extraction it is necessary to inject a few minims in the soft tissue on the lingual. The mental foramen opens distally and to get the needle down in the canal, it would be necessary to enter from the distal, but that is not

necessary. To be successful in getting profound anaesthesia, only the point of the needle need be in the foramen. The needle may strike the mental nerve, giving prolonged anaesthesia of the lip. This usually passes off in a few days or weeks.

1604 Medical and Dental Building

● *The history of the world is but the biography of great men—Carlyle.*

● *Patience is power. With time and patience, the mulberry leaf became satin.—Eastern proverb.*

● *"Many a man thinks he has a clear conscience when he has only a poor memory."*

SOUND OFF

The chief resident was making ward rounds, with a troop of admiring students at his heels. He stopped at the bed of a patient who was suffering from an infection of the gums and jawbone. "Musician, eh?" said the doctor, glancing over the man's chart. "Play a brass instrument?" The patient nodded, and the doctor remarked to the students, "Classic illustration of my theory of the influence of brass instruments on mouth infections."

The students looked impressed. "What instrument do you play?" one of them asked. "Cymbals," said the patient.

—By permission Medical Economics

Vincent's Infection*

by S. CRIPPS,† B.A., D.D.S., L.D.S.R.C.S., Montreal, Quebec

FOR MANY years, Vincent's Infection has enjoyed considerable prominence in the dental literature, and yet, whenever this disease has occurred in near epidemic proportions, it has eluded with eminent success our lukewarm attempts at treatment.

Vincent's Infection thrives under conditions where large numbers of individuals are living together in close quarters, lacking a diet high in vitamins (particularly Vitamin C) and an adequate standard of eating utensil hygiene.

BACTERIOLOGY

Typical smears taken from infected areas reveal *Treponema Vincenti* or *Borrelia Vincenti*, several varieties of fusiform bacilli, an anaerobic streptococcus and some moulds.

Although the dental student should know that these organisms inhabit the infected mouth in demonstrable numbers, one must agree with many observers that the clinical signs and symptoms override the bacteriological findings and that the bacterial picture should be used as a confirmatory rather than as a diagnostic measure. Ruth Tunnicliff claims that "Diagnosis from smears in lesions around the gingivae is very hazardous." The fact that the exciting micro-organisms can be found in the normal mouth detracts from leaning too heavily on this procedure as a diagnostic aid.

However, a bacteriological examination will be indispensable when faced with an obscure or uncertain differential diagnosis such as the diphtheric membrane which could be mistaken for the pseudo-membrane of Vincent's Angina, herpes simplex stomatitis in infants, streptococcal infections and systemic manifestations in the mucous

membranes of the mouth of leukemia, leucocytopenia, vitamin deficiency and menopause changes.

DIAGNOSIS

The correct diagnosis is undoubtedly the most important factor in the prompt and successful treatment of Vincent's Infection. The easily recognized signs and symptoms should present no vexing problem. To investigate all the predisposing factors that have reduced local tissue resistance and have courted an autogenous or exogenous form of infection demands an understanding of the underlying aetiology of Vincent's Infection. For example, the periodontal pocket which has provided an ideal home for the causative bacteria must be diagnosed as a vital predisposing agent. Similarly, the partially erupted third molar with its attendant flap must be identified as the original focus of infection, and as such, must be removed as soon as the infective process permits. The neglect to recognize and eradicate, whenever possible, all local predisposing causes, will result in a most unfavourable prognosis and a probable recrudescence of the acute stage.

In view of the frequently stressed signs and symptoms that are so characteristically pathognomonic of this disease, it is surprising to find such a divergence in diagnosis among dental practitioners. The incidence of infection in any area where large bodies of men are living has always been difficult to assess with any degree of accuracy. One has to cherish the fond hope that the number of positive cases which evade diagnosis equal the number that have been labelled Vincent's Infection and are in fact non-specific gingival conditions.

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†Lectures in Periodontia at McGill University.

Years ago, it was a small voice in the wilderness that hailed the healthy, well kept mouth as a most unlikely victim of Vincent's Infection. Today, that opinion is practically unanimous. Kronfeld states, "It is probably true that Vincent's Infection cannot be communicated to a person in good health, with a clean mouth and healthy gingivae." Conversely, the debilitated mouth is ever running the risk of acquiring this infection. Thus communicability and contagion of this disease will vary with local conditions and the state of oral health. The incidence of soft and hard tissue disturbances is high enough to advise partial isolation procedures during an outbreak of Vincent's Infection.

There are three phases of this disease; the acute, the sub-acute and the chronic. Although the recognition of the sub-acute and the chronic conditions is controversial, the consensus of authoritative opinion favours the three phase classification. (Figures 1 & 3).

The signs of the acute phase:

1. The presence of a grayish-yellow pseudo membrane. The removal of

this membrane reveals a bleeding fiery red surface.

2. Progressive ulceration results in a typical punched-out interproximal appearance.
3. Gingival haemorrhage is spontaneous.
4. Fetid breath. The odour is so distinctly peculiar to this infection that the experienced operator can often make a positive diagnosis while the patient is opening his mouth for examination.
5. The gingivae are red and swollen.
6. Profuse salivation.
7. Tenderness to touch.
8. Enlargement of the submaxillary and submental lymph glands.
9. Sudden onset.

The symptoms of the acute phase:

1. The most marked complaint of the patient is pain, aggravated by the intake of food and hot liquids.
2. A pronounced metallic taste.
3. A sensation of interproximal wedging.
4. Malaise and a raised temperature.

The sub-acute phase is characterized by the absence of ulceration. Instead, there is considerable puffiness of tis-

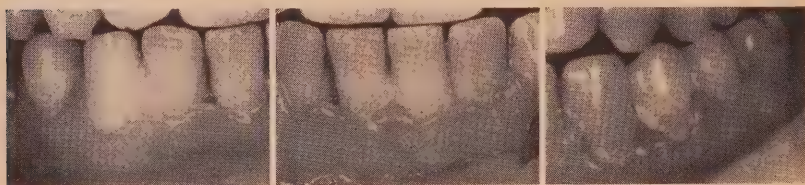


Fig. 1.—Acute Vincent's Infection

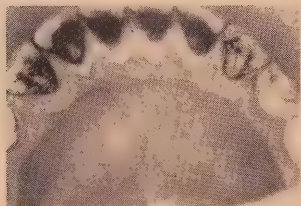


Fig. 1. Acute Vincent's Infection Lingual Lower Anteriors.

sue which is bluish red in colour. Most of the other signs and symptoms of the acute stage may be present but less striking and much attenuated.

In the *chronic stage* all the acute signs and symptoms have disappeared, leaving a picture of interproximal destruction that varies with the severity and the duration of the acute phase. Frequently, a truncated appearance gives the impression of the patient hav-

ing undergone an extensive gingivectomy.

The irreparable damage suffered by the periodontal structures when the undiagnosed or improperly treated acute phase is permitted to lapse into the chronic stage must be accepted as a challenge by the profession and an imputation to our ability to appraise the possibilities of this perplexing condition.

TREATMENT

The successful treatment of Vincent's Infection must imply its complete and utter eradication rather than the subsidence of the acute signs and symptoms. We must realize the antibacterial therapy is only the opening gun of an all-out attack. The choice of medicaments is wide and ranging from oxidizing agents, aniline dyes, arsenical and mercurial and silver nitrate preparations, caustics to the modern use of the antibiotics. Each drug has its own group of sponsors and devotees. (Figure 2.)

local disease and with exception of isolated cases, can be handled successfully with local treatment. The patient suffering from a very virulent attack whose systemic symptoms have been considerably heightened, can be regarded as an exceptional case. One or several massive penicillin injections will provide rapid improvement. Penicillin therapy will also be most helpful in cases of Vincent's Angina, or in fulminating conditions involving the inside of the cheeks, the lips, the tongue and the palate.

When penicillin first made its appearance, it was hoped in certain quarters that the panacea to cure Vincent's rapidly had finally been discovered. It took but a short period to realize rather painfully that the penicillin injection and the lozenge were only antibacterial agents after all, and that the basic predisposing factors had yet to be faced.

The desire to by-pass and short-cut, so characteristic of our present civilization, found yet another outlet for the

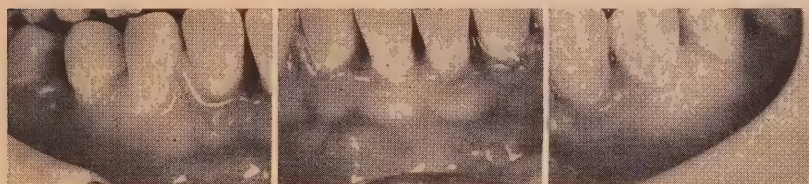


Fig. 2.—After two treatments—48 hour interval. Treatment consisted of (1), Light scaling. (2), Zinc oxide splint. (3), Two applications of 6% chromic acid followed by hydrogen peroxide. (4), Prescribed home care.

There is no doubt that this formidable array of medicaments has given satisfaction in the treatment of the acute bacterial phase. However, the repeated use of one specific can produce a marked tolerance in some patients and provide a source of irritation to others. The alternating use of a wide variety of drugs can be strongly recommended for effective and rapid action without undesirable effects.

There are very few indications for the present day intramuscular injection of penicillin. This is essentially a



Fig. 2. Lingual aspect after two treatments

simplified treatment of Vincent's Infection. At one point in the 1939-45 War, massive intake of Nicotinic Acid

was suggested as the therapeutic method of eliminating this disease. The underlying periodontal condition and neglected oral hygiene took on secondary importance. Here again, clinical results demonstrated the shortcomings of a form of therapy which relegated fundamental principles to a minor negligible role.

When the essence and aetiology of this disease are fully appreciated, it will be quite obvious that the advent of any future bactericide, however startling and spectacular, could only accelerate the antibacterial phase, but unfortunately would not dispose of the periodontal background of this condition.

Lyons endorses this observation so succinctly when he says; "that the institution of drug therapy alone may produce a lapse of the acute signs and symptoms but will invariably bring in its train a state of chronicity, remission and exacerbation of the acute stage followed by tissue deformity and a well developed periodontal condition thriving in areas of minimal tissue resistance." (Figures 3 and 4.)

The first requisite in treatment is a state of cleanliness instituted in the shortest possible time involving the minimum amount of tissue injury and irritation. Instrumentation must be prompt but gentle and controlled. The early uncovering of the zones of incubation will enhance the efficacy of the drugs in use. In light of our present knowledge of Vincent's Infection, Mowry's time honoured battle cry "Give me a bucket of seawater and a sharp scaler," reveals a realistic approach to the treatment of this condition.

A day to day plan of treatment of the routine acute case may best illustrate the writer's method and rationale of coping with this disease.

First Visit

- a. A brief case history followed by a thorough examination of the mouth and the site of the lesions.
- b. Careful spraying of the mouth under very low pressure with a



Fig. 3. A.—Sub-acute Vincent's infection after several remissions; a product of repeated applications of one drug, inadequate instrumentation and poor oral hygiene.



Fig. 3. B.—Shortly after treatment—consisting of effective anti-bacterial therapy and prompt periodontal attention (Courtesy Dr. J. M. Dyce)



Fig. 4.—Recurrent Vincent's infection, showing tissue deformity and well-developed periodontal condition.

50% solution of hydrogen peroxide (3%)

- c. Isolation and painting of the ulcerated areas with one of the favoured anti-Vincent drugs.
- d. Light scaling involving careful removal of food debris and supragingival deposits compatible with patient comfort. The scaler is continually dipped, wiped and re-dipped in the medicament of the day. In exquisitely painful cases,

instrumentation is kept down to the minimum.

e. A second irrigation with hydrogen peroxide.

f. The application of a zinc oxide splint to the most acutely infected areas. A thin paste of zinc oxide, oil of cloves and thymol is prepared into which wisps of cotton are incorporated. The lips, cheek and mucous membranes are generously lubricated and the mixture is gently applied labially, buccally and lingually.

The outstanding advantages of this splint are the immediate cessation of pain, the isolation and protection of the ulcerated areas and a rapid resolution of the covered tissues. The vast majority of Vincent's cases lend themselves to this technique.

g. If the systemic symptoms are unduly alarming, the patient should be referred for immediate medical attention. If the severity or locale of the condition calls for intramuscular injection of penicillin, this can be arranged at the same time.

h. Finally, a simple explanation to the patient describing the nature of his illness and a review of the written instructions for home use.

Second Visit (48 hour interval)

a. Careful removal of the splint.

b. A second application of the same or alternative drug.

c. Light scaling is continued with a minimum of tissue disturbance.

d. A second zinc oxide splint is applied.

Third Visit (48-72 hour interval)

The same procedure as on the second visit, striving all the time to get the mouth into a sanitary condition in the shortest possible time consonant with the improvement in the condition and the comfort of the patient.

At this stage further splinting of

the tissues is seldom necessary. (Figures 1 and 2.)

Fourth Visit (48-72 hour interval)

The patient is instructed in thorough but careful brushing and interdental cleansing. In most cases, one can proceed with normal instrumentation and the patient can also increase the extent of his home care. (Figure 5.)



Fig. 5A.—After three recorded attacks of Vincent's Infection.



Fig. 5B.—Post treatment (21 days). Reduction of infection employing minimum drug therapy, early instrumentation followed by routine management of hyperplastic gingivitis.

From now on, with the complete subsidence of the acute phases of the disease, one can embark on the vital part of the anti-Vincent program. This consists of the elimination of the focal incubation zones. Box has divided these into the primary and secondary zones. The primary zones are the initial lesions in the autogenous group:

1. Gingival flaps of partially erupted third molars.
2. Lingual margins of periodontal pockets about the upper central incisors.

3. Buccogingival margins of molars in crowded contact with the mucous membranes of the cheek.

4. Cryptic tonsils.

The secondary incubation zones are those areas of minimal tissue resistance attacked after the organisms have grown in virulence.

1. Gingival tissues in traumatic occlusion.
2. Inflamed gingival tissues due to calculus, overhanging and sharp margins of restorations, open contacts, cervical caries beneath gingival margins, mouth breathing, excessive smoking or excessive use of alcohol.
3. Periodontal pockets.

To master this disease requires more than a cursory glance at the aforementioned aetiological factors. These must be dealt with decisively. All sources of irritation and periodontal pockets must be eliminated. Unfortunately, in many neglected mouths this may necessitate long-term treatment. The sad truth in our handling of this disease, is that we falter and frequently come to a standstill at a point when our greatest efforts are required for the removal of these causative zones of incubation. Too often, the patient's apparent return to normal will lull us into wishful thinking that we have completed our mission. A careful review of these perfunctorily treated cases foreshadows progressive periodontal conditions in some and supporting structures crippled irretrievably in others. (Figure 5a.)

Sample copy of typewritten instructions for home care:

1. All toothbrushes in use should be destroyed. A very soft bristled brush, preferably badger hair, to be purchased immediately and used when suggested by the dentist.
2. Eating utensils should be segregated and boiled after use for the first week.
3. Mouthwash: Hydrogen Peroxide (3%) and water in equal proportions. (half and half)

This mouthwash should be retained in the mouth for 1-2 minutes and forced between the teeth. To be used six times daily until further notice.

4. 1 pint of pure orange juice daily. If unobtainable, 5 tablets Vitamin C (50 milligrams each) daily after meals.
5. Light diet and drink large quantities of water.
6. Effective laxative.
7. No smoking and no alcohol.

Irrigation of the mouth using a suitable irrigator is more efficient than the ordinary mouthwash and should be prescribed if available.

CONCLUSION

The successful treatment of Vincent's Infection is only possible if all the underlying causes are removed. For the greater part, treatment in the past has consisted of a barrage of a variety of drugs that has reduced the bacterial index and the acute signs and symptoms but has not produced a cure. The probability of recurrence and the ensuing loss of covering and supporting structures should stir us to a more serious consideration of this refractory disease.

SUMMARY

1. The bacteriological smear in the diagnosis of Vincent's Infection is important but should be used as a confirmatory rather than as a purely diagnostic measure.
2. Clinical diagnosis of this condition is facilitated by the easily recognized signs and symptoms.
3. It is being suggested that Vincent's Infection will attack oral tissues impaired by local irritants coupled with some systemic debility. The controversial issue of communicability would be practically non-existent in a civilization blessed with normal periodontal tissues.
4. Although effective antibacterial therapy is an essential part of treatment, the resultant reduction

of the acute signs and symptoms does not represent a cure.

Incomplete treatment will in all probability lead to recurrence with a heritage of soft and hard tissue deformity.

5. The choice of medicament is not nearly as important as the mode and frequency of application. Continued bathing of the soft tissues with any one of the bacterioidal agents is highly irritating and ineffectual.
6. No master drug has replaced the necessity for sound oral hygiene.
7. Instrumentation must be early but controlled.
8. A splint consisting of zinc oxide, oil of cloves and wisps of cotton is being suggested in the initial stages to immobilize the affected parts and act as a sedative and bacterioidal dressing.
9. Typewritten or printed sheets of home instruction should be issued on the first visit.

10. The cure of Vincent's Infection lies within our grasp provided we recognize and eliminate the underlying causes.

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One mark of an educated person is his willingness to accept new ideas for examination and testing. He never laughs at a new idea no matter how ridiculous it may appear. Our history is replete with examples of people who laughed at new ideas: the idea that the world is round; that a sailboat can run into the wind; the idea of being able to talk over a wire; or in their opinion, funnier still, the idea of talking at great distances through the air. The laughter of these people has been drowned by the cheers that accompanied the achievement of these impossibilities. Let us remember that practically everything man has imagined, he has been able to accomplish: to fly like a bird; to travel twenty thousand leagues under the sea; to communicate across great distances. Even Dick Tracy's wristwatch-radio is an accomplished fact. One exception to date is inter-planetary travel. Who can deny that this will not be accomplished and probably in the lifetime of some of us?—Willard C. Fleming, D.D.S., in Jour. Am. College of Dentists.

A State health service existed in Egypt under the Ptolemies in the first centuries of our era. "A passage of Diodorus Siculus, for example, in mentioning that Egyptian doctors are paid by the Government, adds that they prescribe according to a written rule, set down by many doctors of the highest reputation. If they follow the treatment set down in the book, and yet cannot save their patient, they are free from all blame; but if they depart from the written instruction, and the patient dies, they are liable to a capital sentence." According to Aristotle, doctors could choose their own treatment if the official one had no effect after three days' trial.

Do not complain that the rose bush has thorns; rejoice that the thornbush has roses. —Arabian Proverb.

Routine Use of Rubber Dam in Dentistry for Children

by GORDON M. JINKS, D.D.S., Vancouver, British Columbia

ALTHOUGH rubber dam has been known to dentistry for almost ninety years, the majority of dentists today do not realize the tremendous advantages there are to be gained by its use. This technique employed in modern dentistry might be compared to the use of the motor car in modern living.

Rubber dam has been discussed by many men^{1,2,3} with the accent on its application to adult dentistry but the real advantage lies in its use in dentistry for children where the factors which are detrimental to good amalgam restorations are magnified tenfold. Cotton rolls cannot effectively control such factors as moisture from the breath and saliva, erratic movements of mandible and associated muscles, gagging and poor patient cooperation.

The supposition that children will be frightened from dental offices by the rubber dam is completely erroneous. Those who have worked with it will agree that the speed and thoroughness with which work can be accomplished far outweighs the little discomfort which is felt at the time. In this regard cotton rolls are also uncomfortable, especially to the child of three or three and one-half years. This age group often require extensive treatment which could not otherwise be done without rubber dam. In fact, the rubber dam application quite often becomes the determining factor in the question of whether to save or extract a tooth.

II. ADVANTAGES OF RUBBER DAM OVER COTTON ROLL TECHNIQUE

1. *Greater degree of protection.* Children are very likely to aspirate or swallow foreign bodies which happen to contact the back of the mouth, espe-

cially if they are emotionally upset at the time. The isolated rubber dam field eliminates this danger. It also permits a more controlled use of caustic drugs such as silver nitrate or phenol and prevents the patient from tasting such unpalatable drugs as eugenol or alcohol. See Figure 1.



Fig. 1. X-Ray of patient who swallowed automatic mallet point. There is a possibility that this foreign body could have been aspirated. Note excess amalgam.

2. *Improves visibility.* It has been suggested⁴ that 56 per cent of amalgam failures are the result of faulty cavity preparation. One cannot see properly into a cavity which is full of saliva and some carious dentine may be missed. Too often operators with good intentions may start a cavity using cotton rolls but finally, after fighting with the child through most of the appointment time, will succumb to the

Note:—All pictures courtesy of Childrens' Hospital, Vancouver.

line of least resistance and allow the field to become wet. Not only does the rubber dam afford a clearer view but also it speeds up the operating time because the operator can watch the cavity while he is cutting it, he does not have to change cotton rolls and he can use his free hand for duties other than holding the rolls. The economic value in the time saved when using rubber dam cannot be too highly stressed. It is definitely a method of making dentistry for children pay. See Figure 2.

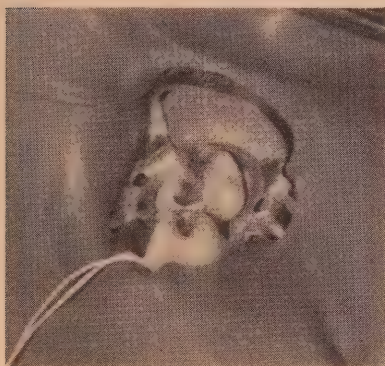


Fig. 2. Restorations done at one sitting under Rubber Dam.

3. More positive moisture control.
4. Better control of the tongue, cheeks and lingual muscles.
5. Eliminates interproximal haemorrhage.

III. USES OF RUBBER DAM OTHER THAN IN ROUTINE CAVITY PREPARATIONS

1. *Pulpotomy*. "In order to maintain a sterile operating technique, application of the rubber dam is imperative".⁵

2. *Airbrasive technique*. "This (technique) requires that a rubber dam be placed whenever the airdent is used."⁶

3. *Parent education*. The dissemination of dental knowledge to parents is of prime importance in pedodontics. It is almost an impossibility to demonstrate the depth of cavities in a child's half-open mouth when the teeth are

wet with saliva. The need for prophylactic odontotomy, for example, can be made manifest to parents by showing them the incipient caries in the dentine of a tooth isolated from the rest of the mouth by rubber dam.

4. *Control of incorrigible children*. These defiant, spoiled children try every defence possible from screaming to feigned choking. Actually all that is required with these youngsters is firmness, and an air of confidence on the part of the operator. To have this confidence the operator must have the wherewithal to carry out a statement such as "the work is going to be done no matter how you move or act." It is surprising how quickly these patients become good when they suddenly discover the ease and speed with which an operator using rubber dam can accomplish the required work. As K. A. Easlick put it "No management—no filling".⁷

5. *General anaesthesia*. Quite often patients come to the office who are unmanageable either because of their age or because of disease such as cerebral palsy.⁸ These cases are best treated in a hospital under general anaesthesia using rubber dam where the whole mouth can be restored in one and a half to two hours. See Figure 3.

IV. PSYCHOLOGICAL EFFECT

The question could now be raised as to the reaction of the child to the rubber dam application. The answer is simply that the average patient accepts it as a part of dentistry and of dental procedure. Some children even request it after they have had experiences with cotton roll or amalgam gagging. The patients who object to its use are usually those who object to dental procedure as a whole. Actually the rubber dam is really a "blessing in disguise" because the accuracy with which a cavity can be cut somewhat reduces the pain inflicted⁹ while it also speeds up the work.

A carefree atmosphere in the office is always more conducive to good

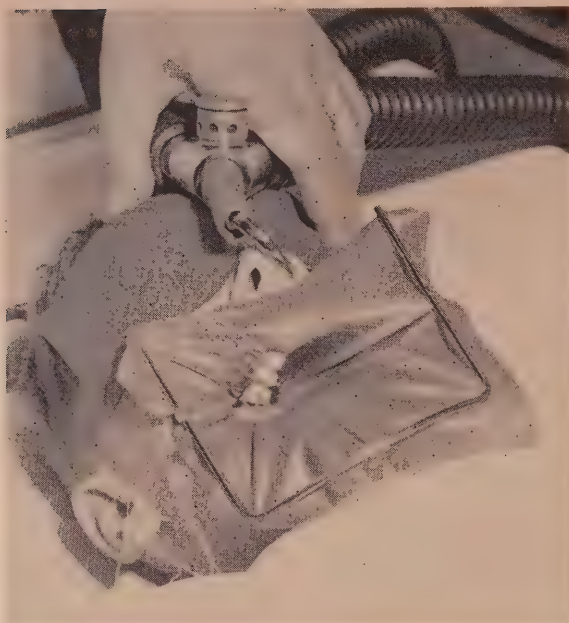


Fig. 3. Patient under general anaesthetic with Rubber Dam in place.

child-dentist relationship. To achieve this type of atmosphere the dentist himself must be at ease. Here the rubber dam is a help because once it is in place the operator can relax. The patient feels more at ease because he can talk even if it just to say "Ouch!" or "Hi"; can sit up to watch the cement or amalgam being mixed, and can have a very good view of the cavity preparation if desired.

The psychological approach to applying the dam is very important. First of all the operator stretches the dam between the fingers to show the patient that it is rubber, then he hands it to the child with the remark that it is a "rubber raincoat" for a tooth. When the dam is applied, he should be taught to speak, to swallow, and to breathe through the nose before the work is begun. It has been found that the fear of being unable to breathe or to speak causes more trouble than the actual discomfort of the dam.

Since a saliva ejector causes some discomfort and concern to the patient, it is dispensed with, and the patient is taught to swallow instead. This is best accomplished by tipping the head back, putting water under the dam and asking the patient to say "Hi!"

V. DIFFERENCES BETWEEN ADULT AND CHILD TECHNIQUE

1. A Young's rubber dam frame is used because:—

(a) It holds the rubber off the face and does not give the patient the same feeling of being restricted as does conventional type rubber dam holders.

(b) It allows children to breathe through the mouth if they so desire.

(c) It is light and does not require the use of weights to hold the dam down.

(d) There are no head straps needed that can slip off when the patient moves.

(e) The dam can be applied easily

without the use of an assistant. This is especially helpful to students.

2. The number of teeth isolated is limited only to those which have a bearing on the operation. For instance, an occlusal cavity on a lower first permanent molar would require only one hole. A proximal cavity between the primary molars would require only two holes. This is done because:—

(a) Children are able to force the dam off the anterior teeth with the lips.

(b) Primary anterior teeth are often loose or missing.

(c) Lower primary anterior teeth are so small and conical in shape that they cannot hold the dam down very well, even when ligated.

3. Ligatures of dental floss are necessary in some cases to secure the dam around unclamped teeth. Ligatures, however, are never used in place of clamps because all primary teeth can be clamped. See section VI.

4. Wings are left on clamps because:—

(a) They are desirable when using the Young's rubber dam frame. The frame does not hold the rubber back from the tooth as does the conventional type holders and the wings do accomplish the desired wide field.

(b) They are necessary for obtaining the correct rotational angle of the clamp in the rubber. This is important and will be explained later.

(c) They can be used as a thumb rest to push the clamp below the height of contour of a tooth which is partially erupted.

5. The gingival tissue around primary and young permanent teeth is more bulky in relation to the exposed crown than that around the teeth of adults. It, therefore, becomes necessary to modify the adult technique somewhat or the rubber dam will be so close to the gingival margin of the cavity that the operator will snag it with the bur. These tissues are more difficult to retract on children because:—

(a) Clamps are not always tight

enough to withstand the force of extra heavy rubber and will be pulled off by it.

(b) The tension caused by extra heavy rubber causes added discomfort to the patient.

(c) The crowns of some primary teeth are so short occlusogingivally^{1c} that no amount of force will carry the rubber far enough away from the gingival margin of the cavity to allow free cutting with a bur.

To overcome this difficulty there are two methods which may be employed:—

(a) The holes are punched very closely together so that only a thin ribbon of rubber goes between the teeth and disappears under the tissue. Surprisingly enough, this does not leak because the exposed hypertrophied tissue bulges into the area not covered by dam and acts as a plug.

(b) The holes are punched so that most of the interproximal tissue will be covered but after the dam is in place a wooden wedge or toothpick is carefully inserted into the interproximal over the dam. The cavity is now prepared and the wood is cut along with the cutting of the gingival step.

VI. TECHNIQUE OF APPLICATION

1. *Instruments:*—

Young's rubber dam frame.

Beaver-tail burnisher.

Clamps.

Dental floss.

5-inch heavy dark rubber.

2. *Clamps:*—

All second primary molars

Ivory No. 4.

First primary molars

Ivory No. 2A or Ivory No. 00.

Primary cuspids and anteriors . . .

Ivory or Ash No. 00.

First permanent molars

Ash No. 56.

Partially erupted first permanent molars . . . Ivory No. 12 or No. 13.

A note may here be made on the Ivory No. 4 which has been found to

be the most useful and universal clamp for primary teeth. However, a word of caution—the Ash No. 4 is not a substitute. Substitutes for the Ivory No. 4 are in order of preference:—Ivory Nos. 3 or 8, Ash No. 8, S.S.W. Nos. 200 or 18 and Ivory No. 2A.

Although it has been found that an Ash No. 56 fits most first permanent molars if applied properly there are times when one must resort to other clamps such as Ivory Nos. 4, 5, 12 and 13.

All clamps in order to be secure must be placed on the tooth below the height of contour. Some teeth, especially young first permanent molars, have their heights of contour well below the crest of the gingival tissue surrounding them and it therefore becomes necessary to gently force the clamp under the height of contour with the fingers or thumbs placed on the wings of the clamp.

3. Punching the Holes. See Figure 4.

Figure 4 illustrates the various groups of holes necessary for different quadrants and situations. Two things should be emphasized:—

(a) The hole cut with the largest punch is the hole for the clamp.

(b) All other holes are cut at an angle of 45 degrees.

4. *Clamp manipulation.* Clamps with wings are more easily used if the wings only are attached to the rubber instead of putting the bow through the hole as is sometimes done. The following procedure may be followed to accomplish the attachment of the clamp to the rubber:

The hole in the rubber is spread open by grasping one side of it between the thumb and forefinger while pushing it open with the third finger placed on the opposite side of the hole. One wing of the clamp is now slipped into and against the edge of the hole and

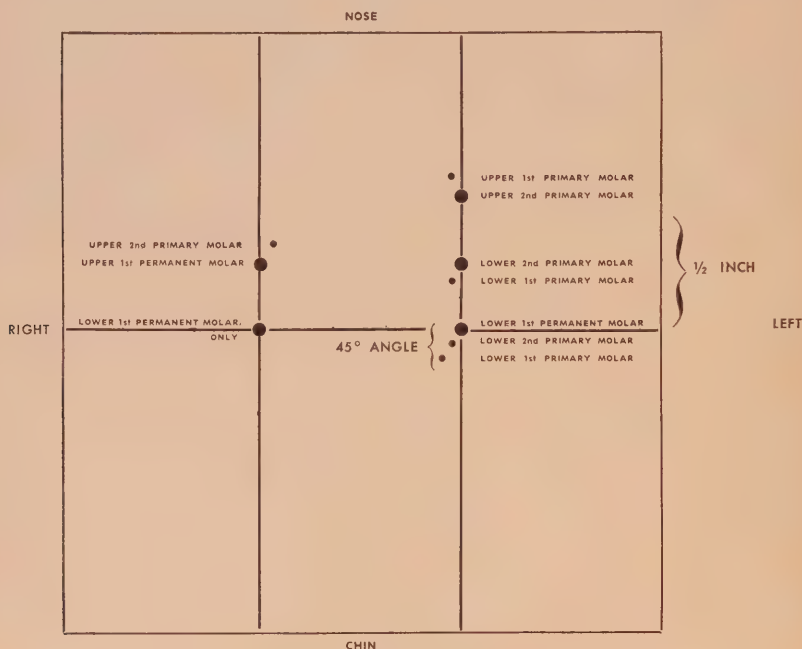


Fig. 4—Punching the holes

the rubber released against the other wing. See Figure 5.

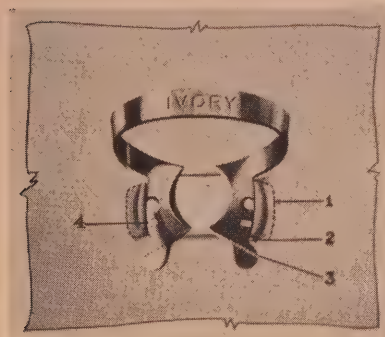


Fig. 5. An Ivory Clamp in the rubber before it is placed on the tooth.

1. Wing of clamp through hole.
2. Notch to be left when cutting clamps.
3. Cut wing of clamp off here.
4. Groove to be cut here to facilitate the insertion of the beaver-tail burnisher under the rubber.

It should be most emphatically pointed out that the clamp must be placed into the rubber at an angle of 45 degrees or so that it is lined up with the holes. Figure 5 also shows how to cut Ivory clamps.

5. *Attachment of the frame to the rubber.* The frame is held on the rubber by tension between the pegs and not by the pegs piercing the rubber. Where one has an assistant this is usually done after the clamp is in place on the tooth but the frame can be attached after the clamp is put into the rubber and then rubber, clamp and frame are carried to the mouth in one operation.

6. *Adaptation of the rubber to the teeth.* The next step is to flip the rubber off the wings with a beaver-tail burnisher so that it pulls tightly around the neck of the tooth. This is more easily accomplished when the clamp has a slot cut as is found in Figure 5. These slots should be cut in all Ivory clamps.

The other teeth are placed through

the remaining holes and the rubber carried through the contact points with dental floss. Should one wish to leave the ligature around the tooth it should be tied on the buccal with a surgeon's knot as described by Black.¹¹ To summarize this procedure the following may be helpful:

- (a) Examine teeth to be isolated.
- (b) Punch holes.
- (c) Select clamp and place it in rubber.
- (d) Carry rubber and clamp to mouth.
- (e) Cinch clamp by forcing under height of contour.
- (f) Place frame in rubber.
- (g) Flip rubber off wings of clamp.
- (h) Put remaining teeth through holes.
- (i) Ligate remaining teeth if necessary.

7. *Solutions to certain problems encountered:*

(a) Deep interproximal caries. The deep proximal cavities between primary molars usually present such complications as exposure and possible pulpotomy, hyperemic and hypertrophied interproximal tissues and unmanageable haemorrhage. These teeth can be isolated with the rubber dam as easily as sound teeth if the excess interproximal tissue is removed with spoon excavators and washed with warm water. The clamp, together with the ligature, will control the haemorrhage.

(b) Matrix application. In routine practice the second primary molar is the tooth most often clamped. It usually requires a class two cavity preparation wherein the use of a matrix band is necessary. The clamp, therefore, interferes with the matrix application to some degree but this problem can be overcome in several ways depending upon the choice of matrix used. If the simple bands such as the welded¹² or twisted type bands are used they can be slipped under the distended jaws of the clamp and then

the clamp released. Both matrix band and clamp will then be attached to the tooth. The author prefers to use the retainer type MOD matrix band which is substituted for the clamp after the cavity has been prepared.

The technique is as follows: the assistant holds the rubber on the buccal or lingual while the operator holds the rubber on the opposite side of the tooth. The clamp is now removed and the matrix is applied to the tooth in its place. When the amalgam has been condensed the band is removed and the clamp reinserted to complete the final carving. See Figure 6.

(c) The distoclusal cavity. Occasionally the tooth which bears the clamp requires a distoclusal cavity preparation. The occlusal portion and part of the distal wall can be operated upon without danger of tearing the dam. The gingival seat, however, is usually well below the tissues and a bur cannot be used here. One can complete the cavity with hand instru-

ments or remove the dam and complete the gingival while using cotton rolls. In the latter case the dam is replaced for insertion of the amalgam.

(d) Diamond points. The use of revolving diamond instruments requires that a water spray be used.¹³ This can be done with the rubber dam in place if the saliva ejector is held on top of the rubber dam.

(e) Anterior teeth. The rubber is held on primary and young permanent anterior teeth much better with the conventional type rubber dam holder than with the Young's frame.

VII. SUMMARY

A workable rubber dam technique for use in routine operative procedures on children has been described. The advantages and uses have been discussed in an effort to stimulate interest in better work for children. It is one of the few techniques in dentistry which requires a low initial cost



Fig. 6. An MOD Matrix band which has been substituted for the clamp.

and gives such a large return. It reduces the amount of work that has to be redone, thereby, reducing the unproductive hours and it speeds up operating by freeing a hand that would otherwise be holding cotton rolls; by taking the fight out of the oral muscles and uncontrolled movements of the mandible, it reduces operative fatigue and nervous tension. There is a safety value in that the danger of aspiration of foreign bodies is eliminated when the rubber dam is in place. Children are not frightened by its use, in fact some children request that the dam be used. The technique is simple to learn and easy to apply and once mastered will prove to be a medium through which many teeth otherwise doomed to the forceps will be saved.

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Progress of the C.D.A.'s Pension-Assurance Plan

by R. P. LOWERY, D.D.S. and P. G. Anderson, D.D.S. (Trustees)

THE approaching second anniversary—in May—of the final approval of the C.D.A.'s Pension-Assurance Plan by the Board of Governors seems an appropriate moment to review for the members something of the history of what was then a unique undertaking by a professional society, but one which seems likely to be followed by others in the future.

Two years ago saw the culmination of more than eight years' effort by the Executive and the Insurance Committee to find a plan which would meet the needs of the members of the profession so completely and so economically that the C.D.A. could adopt it as its own. The length of time required to find such a plan is sufficient comment upon the difficulties.

In the end, and after exploring all the regular sources, the Committee had to work out its own answer to the problem based on the knowledge accumulated over the years of the economic problems of dentists. In this

work the Committee had the assistance of Mr. E. L. R. Williamson, M.B.E., B.P.A., a consulting economist, now Administrator of the Plan, in regard to the technical aspects. We think it only fair to the Committee and their adviser to point out that the C.D.A. Plan was produced entirely by them—by members of the profession for the profession—before any underwriters were called in to undertake the legal responsibility for the contracts.

But before implementing the Committee's recommendation, it was necessary, of course, to establish the soundness of its work. It is very gratifying that two firms of consulting actuaries—one in Canada and one in the United States and each outstanding—working independently of each other, reported that the C.D.A.'s Plan is completely sound actuarially, that it provides more comprehensive benefits than can be obtained under any other plan or combination of plans avail-

able, and that where the benefits can be compared, they are at the lowest premium rates which they can discover in North America.

One might suppose that such an achievement would be sufficient in itself, but even after the Board of Governors and the Executive had set their seal upon the work of the Committee, much remained to be done: obtaining the underwriters and fulfilling the innumerable legal requirements. Almost a year of strenuous efforts to overcome the obstacles was required to do this. We gratefully recall that in the end the Beacon Insurance Company of England and the group of companies associated with the Beacon consented to come to Canada for the express purpose of undertaking the pension, life assurance, and family income phases of the Plan; while the powerful American company, the Mutual Benefit Health and Accident Association, the largest association of its kind in the world, undertook the unprecedented disability indemnity, hospitalization, and surgical benefits.

The C.D.A. Plan now has been available to the members of the C.D.A. for approximately seven months, and we are informed that the initial success has set a new record in Canadian insurance. As the Trustees of the Plan, we reported to the National Executive on February 13 that the Administrator has prepared 841 analyses for members, and that a total of \$1,754,060.00 of Life Assurance risk is in force, with Pensions totalling \$49,080.00 annually on maturity, or Cash Options of \$627.048.00 in lieu of pension. The Disability Indemnity in force exceeds \$10,000.00 monthly for a total risk of \$3,232,000.00. It should be noted that,

unlike the previous record, it has been achieved despite the fact that the offering has been restricted to a single group—the dental profession.

We are glad to be able to report this initial success because as two of those who have served substantial terms on the Executive, we know the vital role which assurance plays in maintaining the financial stability and peace of mind which are essential to the successful practice of the profession. We also know of the suffering and heart-break which occur when assurance is not available in the hour of need.

We believe that this service of the C.D.A. to the members of the profession is, in its way, as essential to the well-being of the profession as the longer established fields of the C.D.A.'s activity. To this end, we hope that the profession will actively support the Association's efforts on its behalf: the expense margin is so small that participation must be extended largely by the interest and initiative of the members themselves.

The Plan can be adapted to any need: To the senior men it is an avenue for both safe and profitable investment for retirement income; to the juniors it offers adequate protection for themselves or their families at the least possible cost; to all it offers a flexibility which is adaptable to any need.

The Association considers that it merits the confidence of each member in return for these efforts. It is our hope and conviction that the C.D.A.'s own plan will be the means to "lifetime economic security" for dentists generations into the future.

"A small mind shrinks everything."

"A little forethought will save much afterthought."

"A great man is always willing to be little."

"It costs more to avenge wrongs than to bear them."

Case Report of Death Under General Anaesthesia

by LESLIE G. ROBINSON, D.D.S., New Westminster, B.C.

BOY, eight years of age, well nourished and apparently in normal good health.

Referred by school dentist to private practitioner.

Examination showed four abscessed deciduous molars, and ten cavities that could be filled. Eight of these were in permanent six year molars.

Since the child was of such a highly nervous disposition as to make the preparation of cavities and extractions under local anaesthesia inadvisable, if possible at all, it was decided to operate under general anaesthesia.

A physician was called to administer the anaesthetic.

No pre-medication. Sodium pentothal was used to start, and after induction lasting perhaps fifteen minutes, sodium pentothal was stopped and nitrous oxide started.

Intra-venous drip of demerol, at a very slow rate was given throughout.

Induction normal — colour good throughout.

Total period of anaesthesia, from in-

duction to death was one hour and twenty minutes, during which time cavity preparation was performed. Frequent check on pulse showed normal up to one or two minutes before death. No evidence of lack of oxygen.

Post mortem showed no explanation of death.

Inquest held, at which leading anaesthesiologist testified that no possible blame could be directed against anaesthetist or operator. All normal precautions had been taken.

Parents had employed legal counsel, but no action was taken following the report of the inquest.

Dentist operating states that in the stress and concern of the moment, which may well be left to the imagination of the reader, the calling of an ambulance for sending the patient to a hospital was overlooked. He feels that this should have been done immediately. He also stressed the point that adequate insurance covering such situations should be held by all dental operators.

Editor's note: Since 1948 Dr. Leslie Robinson, the author of the above Case Report, has been the B.C. editor for this Journal and now finds it necessary to retire on account of other professional duties which are being thrust upon him. His service has been most efficient and is greatly appreciated by all concerned.

During the past twelve months American tobacco factories, it is reported, produced 430 billion cigarettes—a record high—and 4 per cent more than the 412 billions produced in 1951. The incidence of lung cancer is rapidly rising, according to the American Cancer Society. Although medical authorities differ as to the relationship between smoking and carcinoma of the lungs, many researchers look on the habit as a causative factor.

Nine billion dollars, equal to three quarters of the federal non-military budget, was spent last year by the sixty-five million persons who make up America's drinking public. This astronomical sum purchased 175 million gallons of hard liquor and about two and one-half billion gallons of beer. Alcoholism—as much an illness as any other physiologic disorder—is an increasing problem. Excessive drinking costs the American public almost one and one-half billion dollars per year and accounts for more than 6 per cent of all automobile accidents. — From Editorial in Jour. of A.D.A. March 1953.

*"Would'st thou go forth to bless? Make sure of thine own ground.
Fix well thy centre first, then draw thy circles round."*

—Trench

The Forum

SYSTEMIC ASPECTS OF PERIODONTAL DISEASE

by LESTER W. BURKET, D.D.S., M.D., Philadelphia, Pa.

Summary of paper in Jour. of Periodontology, Jan. 1953

Since the periodontal structures are part and parcel of the entire organism they must participate to some degree in every systemic derangement. Our present inability to find one or several systemic conditions which may serve as aetiologic factors in periodontal disease should emphasize the need for complete physical evaluation of every patient.

The chronic mild nutritional deficiencies represent probably the most important group of diseases which may predispose to periodontal disorders. Uncontrolled diabetes has an indirect and perhaps a direct relation to periodontal disturbances. Every periodontist should serve as a "case

finder" for this increasingly common disease.

Disturbances of endocrine function and some of the diseases of the blood have a marked effect on the tooth supporting tissues, however, their rare occurrence minimizes their general clinical significance. The side effects of therapy of many systemic diseases and the metal intoxications result in distinctive periodontal lesions.

The exact significance of specific systemic factors as aetiologic components in the pathogenesis of periodontal disease can not be determined. This, however, does not justify a disregard for systemic factors in patients with periodontal disease.

PERFECT SEAL IMPOSSIBLE—SILVER FOUND BEST FOR FILLING TEETH

by HERBERT C. MORTON

Condensed from Minneapolis District Dental Journal

Those silver fillings in your teeth are the best which modern dentistry can provide, according to Dr. William H. Crawford, dean of the University of Minnesota's dental school.

They're not perfect, he said, but the completely satisfactory filling material is not known to us. Researchers are still looking for it.

He said that no filling really seals a cavity against the threat of additional decay. This was effectively demonstrated by a technique introduced a year ago by Dr. W. D. Armstrong and W. J. Simon of the university.

The technique was to immerse filled

teeth in radioactive calcium and then to photograph them. Penetration of the radioactive calcium would show up in black on the picture.

"The surprising part of the tests," Dr. Crawford said, "is that the solution penetrated around all kinds of fillings," although less around the silver filling.

The silver filling has other shortcomings, however, according to Dr. Crawford. It wears too much on the biting surface. It can't be used to replace a missing tooth and it's too brittle to replace a corner of a tooth.

This is why gold inlays have to be

used, Dr. Crawford said. The trouble with gold is that it's not plastic and can't be packed into a cavity. Gold inlays must be fastened with cement, and the cement is very permeable. In view of this permeability, the surprising thing is that gold inlays last as

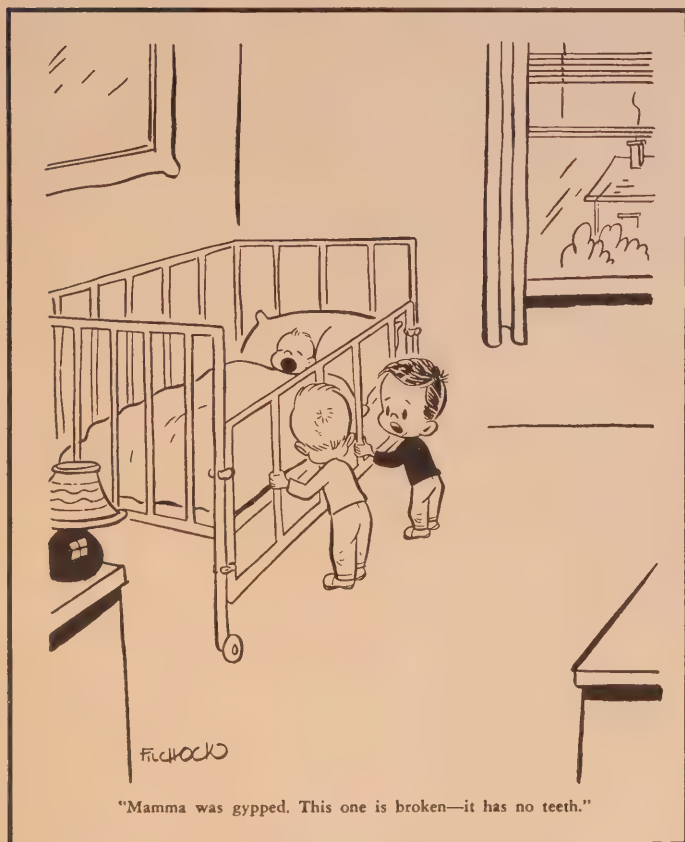
long as they do, Dean Crawford said.

Until a couple of years ago nothing new in filling material had been developed in 25 years, Dean Crawford said. Then plastic fillings were introduced. But these have proved unsatisfactory.

"Knowledge without practice makes but half an artist."

*In the elder days of Art,
Builders wrought with greatest care
Each minute and unseen part;
For the Gods see everywhere.*

—LONGFELLOW



JOINT MEETING

**THE CANADIAN DENTAL ASSOCIATION
THE ANNUAL MONTREAL FALL CLINIC**

UNDER THE AUSPICES OF

THE COLLEGE OF DENTAL SURGEONS, P.Q.
MONTREAL, QUE. OCTOBER 18-19-20-21, 1953

PROGRAM OUTLINE**SATURDAY, OCTOBER 17**

Football Game— McGill University vs. University of Western Ontario.
(Please make own reservations c/o Athletic Office,
McGill University, Montreal, Que.)

SUNDAY, OCTOBER 18

Mount Royal Hotel— Registration Musicale

MONDAY, OCTOBER 19

Mount Royal Hotel— Registration Table Clinics
— Essays Exhibits
— Canadian Dental Association—Luncheon
— —Annual Meeting
Class Reunions— McGill, Université de Montréal
(Class Secretaries please arrange)

TUESDAY, OCTOBER 20

Mount Royal Hotel— Morning Program
— Registration Essay
— Atomic Energy Program
— Exhibits
Université de Montreal— Afternoon Program
The entire afternoon program will be held in the
Dental Faculty of the Université de Montréal which
is celebrating its 50th Anniversary. The program
will consist of group clinics, table clinics and scientific
sessions.
Windsor Hotel— President's Dinner Dance—Sponsored by the College
of Dental Surgeons, Province of Quebec

WEDNESDAY, OCTOBER 21

Mount Royal Hotel— Exhibits Essays
— Group Clinics Montreal Dental Club Luncheon

LADIES' PROGRAM

**CANADIAN DENTAL NURSES' AND
ASSISTANTS' ASSOCIATION**

Mount Royal Hotel— Coffee Party Luncheon
October 18 to 21, 1953— Tea at Chalet, Mount Royal Dance
Seventh Annual Meeting in conjunction with The
Montreal Dental Nurses' and Assistants' Association
Nineteenth Annual Convention.
For information—Miss Lois Winters,
1224 St. Catherine St., Montreal

PRELIMINARY PROGRAM

ESSAYISTS

Dr. H. A. BAXTER, Montreal, Que.	"A Complete Rehabilitation Program for Cleft Lip and Palate Cases."
Dr. G. V. FISK, Toronto, Ont.	"Grieve Memorial Lecture."
Dr. H. SELYE, Montreal, Que.	"Diseases of Stress."
Dr. W. W. WAINWRIGHT, Chicago, Ill.	} "Atomic Energy in Dentistry."
Dr. D. L. TABERN, Chicago, Ill.	
Dr. C. P. LeBLOND, Montreal, Que.	
Dr. E. D. TROUT, Milwaukee, Wisc.	

GROUP CLINICIANS

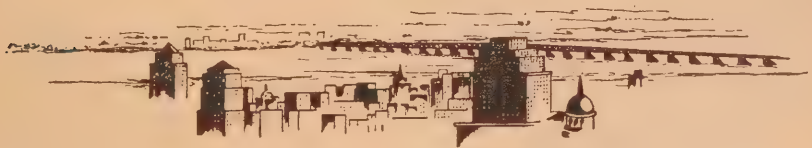
Dr. P. G. ANDERSON, Toronto, Ont.	"Operative Dentistry."
Dr. H. M. CLINE, Vancouver, B.C.	"Gold Foil."
Dr. R. R. McINTYRE, Calgary, Alta.	"Orthodontics."
Dr. V. L. STEFFEL, Columbus, O.	"Partial Dentures."
Dr. J. B. MILLER, New York, N.Y.	"Crown & Bridge."
Dr. D. M. TANNER, Toronto, Ont.	"Oral Surgery."
Dr. H. R. McLEAN, Edmonton, Alta.	Restorative Dentistry."
Dr. R. J. GODFREY, Toronto, Ont.	"Prosthetics."
Dr. W. F. WALFORD	} Dept. of Periodontia, Faculty of Dentistry, McGill University, Montreal, Que.
Dr. P. J. GITNICK	
Dr. S. CRIPPS	
Dr. A. RAYMOND, Montreal, Que.	"Practical Periodontia."
	"Anatomy and Pathology of the Temporo-Mandibular Joint. Surgical Correction of a True Bony Ankylosis."
Dr. R. GENDRON, Montreal, Que.	"Conservative Treatment of Temporo-Mandibular Disturbances Associated with Faulty Occlusion."
COMMANDER D. P. DOBSON, (DC), U.S.N. Bethesda, Md.	"Partial Prosthesis."
COMMANDER W. J. HEDMAN, (DC), U.S.N. Bethesda, Md.	
Royal Canadian Dental Corps, Ottawa	"Endodontia."
Royal Canadian Dental Corps, Ottawa	"Certain Aspects of Endodontia."
	"Prosthetic Dentistry."

TABLE CLINICS

Those interested in presenting table clinics should please contact
Dr. A. F. Cameron, 1414 Drummond St., Montreal, Que.

PLAN NOW TO ATTEND

Cheques or money order for registration fee of \$15.00 should be made payable to The Montreal Dental Club and mailed to Dr. D. B. Ward, Joint Convention Committee Secretary, Suite 309, 1414 Drummond Street, Montreal, Que.



MONTREAL, THE METROPOLIS FROM MOUNT ROYAL

ANNOUNCEMENTS

● **ART EXHIBIT IN CONNECTION WITH CANADIAN DENTAL ASSOCIATION MEETING**, Mount Royal Hotel, Montreal, October 18, 19, 20 and 21. All dentists, members of their families, and office staffs are invited to exhibit paintings, photographs, sculpture, or other works of art they may have produced as a hobby. Full information later.

● **NORTHERN ONTARIO DENTAL ASSOCIATION CONVENTION** will be held in New Liskeard on September 11 and 12. Clinicians for the meeting are Dr. George C. Hare and Dr. E. R. Bilkey.

● **EASTERN ONTARIO DENTAL CONVENTION** will be held at the Chateau Laurier Hotel, Ottawa on September 20, 21, 22.

● **AMERICAN DENTAL SOCIETY OF EUROPE**, Annual Meeting in Bergen, Norway. August 4-7, 1953, Hon. Secretary, F. Douglas Derrick, 140 Park Lane, London, W.1.

● The **MARITIME DENTAL CONVENTION** is to be held at Keltic Lodge, Ingonish Beach, Sept. 3-5, 1953.

● **AMERICAN DENTAL ASSOCIATION CONVENTION** at Cleveland, Ohio, September 28 to October 1.

● **10th ANNIVERSARY MEETING OF THE AMERICAN INSTITUTE OF DENTAL MEDICINE**, Palm Springs, California, October 25-29. For information apply to the Executive Secretary, 2240 Channing Way, Berkeley 4, California.

● **ANNUAL MEETING OF THE INTERNATIONAL DENTAL FEDERATION**, Oslo, Norway, July 26 to August 1, 1953.

G. H. Leatherman, Secretary
35 Devonshire Place, London W.1, England.

● Matters relating to the **C.D.A. PENSION-ASSURANCE PLAN** should be addressed to the Administrator, Mr. E. L. R. Williamson, Post Office Box 70, Brockville, Ont.

● **THE GRADUATE SCHOOL OF MEDICINE OF THE UNIVERSITY OF PENNSYLVANIA** announces a new and longer course in Orthodontics, under the direction of Dr. Paul V. Reid, to be given commencing September 9, 1953, and running for sixteen consecutive months. Dentists who successfully complete this sixteen-month course may matriculate for the degree of Master of Dental Science under the preceptorship plan of the University. For further information write to the Dean, Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4, Pa.

● **TEMPLE UNIVERSITY** announces a two-weeks course in **ORTHODONTIA** for practising orthodontists only, beginning January 24, 1954, under the direction of Dr. Robert H. W. Strang. Cost \$200.00.

Apply to Dr. Louis Herman, Director of Postgraduate Studies, Temple University School of Dentistry, 3223 North Broad Street, Philadelphia 40, Pa.

● **TUFTS COLLEGE DENTAL SCHOOL ANNOUNCES ITS GRADUATE AND POST-GRADUATE PROGRAM IN PERIODONTOLOGY** for 1953-54, conducted by Professor Irving Glickman and staff, as follows:

A full-time two-year specialist training program; a one-year full-time specialist training program; an 18-month full-time course leading to an M.S. or M.S.D. Degree.

DPG. 601-Participation Course in Periodontology. Two weeks—October 5-17, 1953. Class limited to 12. Tuition \$250.00. DPG. 602-Participation Course in Periodontology. April 12-16, 1954. Class limited to 12. Tuition \$150.00. DPG. 603-Kirkland Gingivectomy Technique. May 17-1, 1954. Class limited to 12. Tuition \$125.00. Dr. Olin Kirkland. DPG. 604-Occlusal Equilibration. Each Monday for five weeks. January 11-February 8, 1954. Class limited to 12. Tuition \$150.00. Dr. Edward T. Fischer.

Apply to Director Graduate and Postgraduate Studies, Tufts College Dental School, 136 Harrison Avenue, Boston, Mass.



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BRITISH COLUMBIA:

Leslie G. Robinson,
New Westminster

Editorial

THE CORONATION

The monarchy of England has survived many tempestuous times but the heart of the British people has been set on the throne itself rather than the individuals who have occupied it, and this trust has been rewarded in times of greatest crisis with sovereigns of great worth.

During England's history there have been three outstanding and prosperous periods. The first was when Alfred the Great became King of the West Saxons in 871 and of all England in 893. He brought great reforms to the people. He even doffed his royal robes for a minstrel's garb to gain knowledge to defeat the Danes. The second great period was during the reign of Elizabeth I, who was crowned in 1558 when England rose to a position of great world power. The role of the crown was well described by this famous Queen when she said, "To be a King and wear a crown is a thing more glorious to them that see it than it is pleasant to them that bear it. For myself I was never so much enticed with the glorious name of King or royal authority of a Queen, as delighted that God made me His instrument to maintain His truth and glory, and to defend the kingdom from peril, dishonour, tyranny and oppression." Queen Elizabeth I rode among her sailors to personally inspire them to greatness, the like of which England had never known. The third period of England's greatness was when Queen Victoria came to the throne and she was noted for her unassailable rectitude. Daniel Webster, the great American statesman, said of his nation, "If we abide by the principles taught in the Bible, our country will go on prospering, but if we and our posterity neglect its instruction and authority, no man can tell how sudden a catastrophe may overwhelm us

and bring all our glory into profound obscurity." It was the similar faith of Queen Victoria that made England great in her day, for she never forgot that there is a God who rules in the Heavens.

Queens have influenced the story of England's greatness to a degree too often overlooked. And now we have another great Queen to rule over us, a member of the most fabulous family that ever lived. On February 6, 1952, Elizabeth II became Queen and on the second day of this Coronation month of June our "Most Gracious Sovereign" went to Westminster Abbey to be anointed, crowned, invested with all the emblems of royalty, presented with a Bible, and "lifted up" into the Throne, while all present bent the knee and bowed the head to do her homage, symbolic of an entire nation in love with its Queen.

The wearer of this Crown is a part of ourselves, the source of much of our strength and courage. She personifies the queenly beauty of legend and the warmth of her personality will be a vital influence throughout her reign. By her high standards and ideals she has secured a sure hold on the imagination of her subjects. Under her reign may "God's terrible and fiery finger shrivel the falsehood from the souls of men." Under her reign may the nation tread all wrong laws under its feet, and rouse a great people when it "views its mighty youth, and shakes its invincible locks" as when "The lion shakes the dew-drops from its mane." Under her reign, by the blessing of God's peculiar grace, may she be able to in some way, in part at least, make all things new for the glory and happiness of mankind.

The Queen in her Christmas broadcast said "pray for me." We shall, and also pray for ourselves that we may find true virtue and vigour in the reign of Elizabeth II. And our prayer is that whatever be the geographical limits of the Commonwealth as destiny may decree, that at least there will be no boundaries to its moral sway but that so long as truth triumphs the flag of Britain shall remain the proud and potential emblem of human freedom.

Queen Elizabeth is every inch a Queen and lends dignity and grace to the high place she occupies. She will have many problems to face but she has the assurance that the Crown was never more firmly established in the hearts of her people than it is today. The dentists of Canada would pledge their loyalty and join with the prayers of millions of others that peace and happiness under Divine Guidance may characterize Her Majesty's reign and may it be a long and glorious one.

M.H.G.

Let me walk with the morning in a new sense of goodness. Let me feel the exultant well-being of all a new day can give. May my heart be opened wide to all beauty and wisdom. May I be a chalice, gathering the good from each moment of the day, from each day of the year.

Let me live this day as if it were the only one of its kind. May it hold for me, and for all those whose lives touch mine, a special dream of magnificence—a realization of something perfected in the grandeur of brotherhood and love.

—Grace Sayre in *The Uplift*.

WE LAY DOWN THE PEN

Twenty years ago there were no national dental journals in Canada which were not privately owned and published for private gain. It was in 1924 when the Canadian Dental Association met in Vancouver that our President, Dr. S. W. Bradley of Ottawa, recommended that the Association publish a journal of its own. It was, however, some years later that our official organ got under way. The first issue appeared in January 1935—eighteen and a half years ago—with the writer as editor. During those years he has tried to be worthy of the high honour his confrères conferred on him and has gloried in the journalistic freedom accorded him by a sympathetic and understanding Committee on Publications. He has never been unmindful of the high trust bestowed on him. He has tried to assert the symbols of truth and virtue, to paint a picture for the dental profession, a picture of the ideal as he has seen it, to say a word that might help someone not to "dissolve the pearl of his soul in the wine of desire" for life is something more sublime and something grander than men think, who only grind in order to eat their daily bread. Dental literature is also something grand and sublime, something which should be guarded jealously, for it is the foundation upon which rests the entire well-being and reputation of the profession at home and abroad.

One might well ask, "What are the characteristics of a great profession?" As pertaining to the dental profession, the answer is no mystery. It exists to promote true dental knowledge. It lives to create an interest in that knowledge and a love for the higher ideals in dentistry. The danger lies in the substitution of technical skill for true understanding. It is so easy to starve the nobler qualities within us and drive imagination out of existence. Science alone cannot give true meaning to our great profession. In the twenty-eighth chapter of Job we read: "Whence then cometh wisdom? and where is the place of understanding?" "Behold, the fear of the Lord, that is wisdom; and to depart from evil is understanding." The function of a dental journal is to maintain truth and virtue as well as present scientific data. The Journal has aimed to represent the best in dentistry. It has tried to provide something for everybody and everything for somebody. No reader should expect to find something of special interest to him on every page nor, indeed, in every section.

Let us beware of false standards in this time of world crisis and danger. The new chancellor of the University of Alberta, Dr. E. P. Scarlett, has said this about the eternities: "Surely the soul of every sensitive man and woman has been seared by the contemporary revolt against culture, the colossal inhumanity which makes a mockery of all high ideals, the betrayal of the decencies of life, the program against all creative minds, the inquisition that dwarfs those of the past. As witness of this new barbarism, there stretch gigantic cemeteries under the moon full of the victims of this awful pestilence."

A dental journal blazes a trail of light, or darkness, across the path of the dental profession. It has been rightly said that without a good editorial page any journal, as a whole, is lacking. To write an editorial each month worth reading is no small task. Editorials have been written in this Journal which, admittedly, have been indifferent and fallen short. There have been those which have pleased the writer. However, it can be truly said that many hours have been put into the effort since it has always seemed that dentistry would become a derelict if the emphasis was only placed on techniques. More important is our need for men of strong character. I would reflect on my work in the words of Kipling—

*"If there be good in that I wrought,
Thy Hand compelled it, Master, Thine—
Where I have failed to meet Thy Thought
I know, through Thee, the blame is mine."*

I am impressed with the words of Henry Ward Beecher: "Every artist who works upon his canvas or upon the stone, or rears up stately fabrics, expressing something nobler to men, giving some form to their ideals and aspirations—every such man also is working for the largeness and so for the liberty of men. And every mother who sits by the cradle, singing to her babe the song which the angels sing all the way up to the very throne, she too is God's priestess and is working for the largeness of men and so for liberty. Whoever teaches men to be truthful, to be virtuous, to be enterprising; in short, whoever teaches manhood, emancipates men; for liberty means not license but such largeness and balance of manhood that men go right, not because they are told, but because they love that which is right." I would say of dentistry as Burke said of the state, "It should be a partnership in all science, in all art, in every virtue and in every perfection."

During the years we have experienced much of that fine partnership and cooperation between the provinces — not the casual flirtation of transient liaisons but something of that fundamental harmony so necessary if we are to live together in peace and happiness.

We are voyagers ever exploring new seas and edging along to new heights of achievement. The consciousness that each issue of the journal plays its part, or does not play its part, in raising dentistry to a higher plane than in the passing yesterday, is a constant inspiration to one's best efforts. Thus charged with the noblest trust in the gifts of the profession—the guardianship of its most precious possession—an editor must rise or fall by the measure of his fidelity to his exceptional duties and must be so judged in the hereafter. This writer has tried to exercise this fidelity and cannot adequately express the measure of grateful appreciation for the wonderful support given to him by everyone who has been associated with him in this great work. Gratitude is a grace that struggles for expression. It not only is felt but it wants to speak. It wants to say, "Thank You." It is difficult to express more forcibly, but we would say that the roses of friendship and

fraternity are growing upon the walls that separate us from the active days of the past:

The writer believes that prayer is the key to successful living and so gives God credit for the wonderful life he has had, and particularly for guidance in carrying on the service to the journal.

Members of our grand profession, on this the eve of my journalistic work, so delightfully mellowed by your expressed approval of my efforts, I give you the gratitude which can perish only "when the gathering shadows shall have settled into the night that issues to purple the better morn."

Now as a new era asserts its challenge in so far as the journal is concerned, I bespeak for the new editor and his fine associates the same splendid team work and esprit de corps which has characterized our efforts in the past.

As we lay down the pen I leave with you, my readers and wonderful friends, the words of D. L. Moody as follows: "Trust in yourself and you are doomed to disappointment; trust in your friends, and they will die and leave you; trust in money, and you may have it taken from you; trust in reputation, and some slanderous tongue may blast it; but trust in God, and you are never to be confounded in time or eternity."

M.H.G.

BOOK REVIEWS

The Story of Dental Caries by Russell W.

Bunting, D.D.S., D.D.Sc., Dean Emeritus of School of Dentistry; Former Professor of Histology and Pathology; Director of Michigan Dental Research Group, Univ. of Michigan. 94 pages. Published by Overbeck Co., Ann Arbor, Michigan.

The author in this treatise on dental caries discusses the phases through which the study of the disease has progressed from the days of the ancients up to the present time.

As Dr. Philip Jay states in his preamble "Every legitimate question in dental caries research has been explored in a clear and interesting manner, skillfully detouring many of the fantasies so characteristic of the dental caries literature, thus sparing the reader the inconsequential."

This story is based upon forty years of

study and investigation of the subject by one who is recognized as pre-eminent in dental caries research, a story that is very well worthwhile perusing.

M.H.G.

The Atlas of the Skeletal Development of the Rat, Normal and Hypophysectomized

by Hermann Becks, M.D., D.D.S. and Herbert M. Evans, M.D., D.Sc., University of California was to come off the press in May.

The extensive material presented consists of 145 pages of reliable photomicrographs and roentgenographic contact reproductions in two volumes.

The edition is limited to 300 copies. Published by the American Institute of Dental Medicine, 2240 Channing Way, Berkeley 4, California. Price \$48.00.

M.H.G.

True courage is to do, without witnesses, everything that one is capable of doing before all the world.—LaRochfoucauld.

Opportunities grow stale unless promptly seized and used. —John Wanamaker.

ROYAL CANADIAN DENTAL CORPS NEWS

Brigadier E. M. Wansbrough, Director General Dental Services, has returned from his annual inspection of No. 12 Coy. R.C.D.C. (A.F.), where he visited all dental installations.

On completion of Brigadier Wansbrough's inspection of No. 12 Coy., he attended the Massachusetts Dental Society Meeting held in Boston, May 3-6, 1953.

Capt. L. A. Richardson attended a course on "Dental Oral Surgery and Anaesthesia" at the University of Toronto, April 27-1 May 1953.

Capt. L. R. Pierce has returned to Canada, having served a year in Korea with 25 Canadian Field Dental Unit.

Capt. R. A. Fell is the Dental Officer with No. 3 Fighter Wing, R.C.A.F., located at Zweibrücken, Germany.

CANADIAN DENTAL ASSOCIATION NEWS

FROM THE OFFICE OF THE SECRETARY

ANNUAL MEETING — MONTREAL

Plans are now well advanced in preparation for the Annual Meeting to be held in Montreal on the following dates:

October 14th to 17th inc. — Board of Governors Meeting.

October 18th to 21st inc.—Convention. An information circular will be mailed the membership in the course of a few weeks. In the meantime desired information may be obtained from:

Dr. M. L. Donigan Chairman,
1953 Convention Committee,
1414 Drummond St.,
Montreal, P.Q.

Reduced Fares

The Canadian Passenger Association has granted reduced fares for persons attending the Annual Meeting to be held in Montreal.

The authorized dates for the start of the going journey will be as follows:

From Stations on Western Lines—

British Columbia—October 6th to 12th, incl., 1953.

Alberta and Saskatchewan — October 7th to 13th, incl., 1953.

Manitoba and Ontario (points west of Fort William and Armstrong, Ont.) — October 8th to 14th, incl., 1953.

From Stations on Eastern Lines — (Fort William and Armstrong, Ont., and all points east thereof, except Newfoundland)—October 10th to 16th, incl., 1953.

From Stations in Newfoundland—October 7th to 13th, incl., 1953.

In order to secure reduced fares it is necessary to present an Identification Certificate at the time of purchasing tickets. Identification Certificates may be secured by writing:

The Secretary,
Canadian Dental Association,
234 St. George Street,
Toronto, Canada.

Dental Health Week — Quebec City—

The City of Quebec observed Dental Health Week April 12-18. The Week's Celebration was sponsored by the Junior Chamber of Commerce.

Splendid cooperation was given by both newspapers and radio in arranging publicity. President Ratté addressed the Junior Chamber of Commerce and the Rotary Club during the week. The main stores of the city cooperated with window displays on dental health. The School Commission arranged for all children to attend the presentation of films on dental hygiene in five different theatres throughout the city. Transportation of the children was made free by the Quebec Power Co. buses.

On Thursday 50 dentists closed their offices and undertook the examination of 3300 children in grades 1, 2 and 3. As a fitting climax to the week La Société de Stomatologie de Québec held a clinic day on Saturday. The chief clinicians on the program were Dean Roy G. Ellis, Toronto; Dr. Paul Geoffrion, Montreal; Dr. Marcel Langlois, Québec; and Dr. Michael Cohen, Boston.

This Dental Health Week inaugurates the establishment of a new program of dental health in Quebec City with the appointment of a director qualified in public health — Antonio Reny, D.D.S., D.D.P.H.

Annual Meeting F.D.I. in Oslo July 26-

August 1st — Notification has been received that plans are now completed for the Annual Meeting of the Federation Dentaire Internationale, in Oslo, Norway, July 26-August 1st. One of the subjects to be highlighted at the meeting will be fluoridation. In addition to the general assembly, meetings of the commissions on oral hygiene, education, foreign relations and armed services will be

held. An all-day excursion for the delegates has been arranged by the Norwegian Dental Association.

Summary Information on Fluoridation

(As the result of a questionnaire)
April 1953

Province	Municipalities now Fluoridating Water	Municipalities Contemplating Action	Attitude of Action of Dental Societies
Newfoundland	None	Gander	
Nova Scotia	None	Halifax	Endorsed
Prince Edward Island	None	Charlottetown Summerside	Favourable
New Brunswick	None	Moncton Saint John	Endorsed
Quebec	None		
Ontario	Deep River Brantford Oshawa Sudbury Fort Erie Thorold	Several	Approved
Manitoba	None	Winnipeg	In favour
Saskatchewan	Moose Jaw	Regina Saskatoon Yorkton Battleford	Endorsed
Alberta	None	Several	Approved
British Columbia	None	Vancouver Victoria	Approved

Additions To The Library

Applegate, S. C. and Perry, C.—Outline for removable partial denture service. 2nd ed. rev. 1947 95 p.

Bataille, Beal, Bureau, and others.—Les tumeurs des maxillaires. 1952. 102 p. illus.

Chadwick, J. and Mann, W. N. — The medical works of Hippocrates. 1950. 301 p.

Collins, V. J.—Principles and practice of anaesthesiology. 1952. 528 p. illus.

Council on Pharmacy and Chemistry of the A.D.A.—New and non-official remedies. 1952. 838 p.

de Frenelle, Dupuy—Pour Diminuer les risques opératoires: anesthésie et réanimation. Soins pré-opératoires. 3e ed. rev. et aug. 1951. 343 p. illus.

Denier, A.—Les ultra-sons appliqués à la médecine. 2e ed. 1952. 216 p. illus

Ennis, LeRoy M.—Dental Roentgenology 4th ed. rev. 1949. 538 p. illus.

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Grether, A. and Marannes, R. Les canines incluses du maxillaire inférieur et leurs complications. 1953. 70 p. illus.

Marguerite, R.—Prothèse au laboratoire et prothèse complète. 1952. 193 p. illus.

Posselt, U.—Studies in the mobility of the human mandible. 1952. 160 p. illus.

Ross, J. C.—Essentials of surgery for dental students. 2nd ed. 1952. 296 p. illus.

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Woerdeman, M. W. — Atlas of human anatomy. Vol. II—1950. 642 fig.

NEWS FROM THE PROVINCES

QUEBEC

At the closing dinner for the McGill Hockey Team, the **Bobby Bell Memorial Trophy** presented by the Montreal Dental Club to the most valuable player on the team this year was won by "Whitey" Albert Schutz who is a student in the Faculty of Dentistry.

A meeting of the **Mount Royal Dental Society** was held April 14 with Dr. B. L. Hyams as clinician. His paper was entitled "The Manifold—A New Component in Dental Anatomy."

Dr. Hyams observed that in botany all plants are divided into three components: a root, a stem, stalk or trunk, and a crown. The tooth which is also a plant or implant is surprisingly divided into two components, a crown and a root, at

the cemento-enamel junction. This cemento-enamel junction is erroneously interpreted. Actually, enamel and cementum are coatings overlying the general form of the tooth.

The manifold which corresponds with the trunk is just as authentic a component. In addition it performs many other functions besides connecting the functioning crown and embedded root. The enamel covered part is associated with contact and attachment of the epithelium or mucosa or gingiva. The cementum covered part is associated with the attachment and re-attachment of the ligaments beyond the embedded part of the tooth.

In addition, if the manifold is taken as a starting point in the study of teeth it acts as an admirable key for analyzing the forms of all the teeth. The proximal

aspect is the most serviceable for such a study. Dr. Hyams has devised an inversion process for disclosing the significance of these relations.

Even after the process of continuous eruption has proceeded to the fourth stage the manifold still retains its full significance although it is now denuded of the original soft issues. At the stage of complete eruption, as early as age six for incisors and first molars, a considerable portion of cementum covered tooth has erupted beyond the alveolar crest. This significant fact seems to be unrecognized, as is also the case with the extensive epithelial overlying of a good portion of enamel covered manifold. The cause for these misinterpretations is the faulty regard for the cemento-enamel junction.

A series of slides was presented to corroborate the anatomical and histological details. L.B.H.

A real "round table" discussion on **Endodontics for Children** under the chairmanship of Dr. Walter Phelps took place at the April meeting of **The Montreal Endodontia Society**. Practically every member of the Society took some part in the discussion and some of the thoughts and case histories reported are summarized below:

Deciduous tooth with abscess and fistula: If the fistula occurs at the gingival margin, it was generally felt that the prognosis is poor and that it is better to extract the tooth and construct a space maintainer. On the other hand, if the fistula opens into the mucobuccal fold, many suggestions were put forward:

1. Clean the chamber and roots as much as possible, irrigating thoroughly; the chamber and only *part* of the roots are filled with putredumore paste; this is covered by cement and a permanent filling. The bite is relieved, polioris poultices applied and a laxative prescribed to reduce the blood pressure.

2. Treat as above but substituting glycerite of iodine for the putredumore.

3. Same as above but using a mixture of zinc oxide, thymol iodide and eugenol as the chamber and canal dressing.

4. The use of ionization.

5. The use of mummifying paste.

All reported varying success with one or a combination of the above methods. Dr. Phelps reported several cases which had fistulae, radiolucent apical areas but which tested vital; these seem to respond with occlusal relief and the use of polioris—much discussion occurred following this report.

The location of the fistulae, as reported, is important, for in many in-

stances it may be found toward the interproximal area in which case it is frequently of periodontal origin; treatment here often simply requires the removal of impacted food material and the insertion of properly contoured restorations in the teeth.

The treatment of the exposed vital tooth has improved considerably in recent years due to the use of calcium hydroxide; it was reported that touching the haemorrhagic point with phenol prior to the application of calcium hydroxide hastens healing and improves the prognosis. Due to the difficulty of applying calcium hydroxide in an interproximal area leaving sufficient room for the insertion of a respectable cement and permanent restoration, one member reported several cases treated with Pulpdent, but could not at present give a definite answer as to its effectiveness.

One member reported on the use of thymol in near or questionable exposures: following the removal of as much carious dentine as possible, cotton pliers are warmed and dipped in thymol crystals; the thymol melts and flows up the beaks of the pliers; this is now touched to the cavity and with the spread of the pliers, the thymol will flow over the whole cavity. This is now covered with a hard zinc oxide and eugenol such as Zonalin, and the permanent filling inserted. Periodic x-ray checks will frequently show sclerosing of the dentine under the filling with the addition of new dentine pulpal to it.

Some questions which remained unanswered at the end of the evening were: 1. Is copper amalgam more desirable in children? 2. Do root canal treated deciduous teeth resorb as rapidly as normal teeth? 3. What is the best method of keeping a deciduous tooth dry? Use of a copper band? Can the rubber dam be applied? 4. Is there a standard treatment for apically involved deciduous teeth? (I am sure the President of the Montreal Endodontia Society, Dr. J. P. Lantier, 1538 Sherbrooke St. W., Montreal, Que., would appreciate any answers to these questions from members of the profession.—Ed. note.)

Following the annual report of the treasurer, Dr. E. S. Dorion, Dr. Dorion also presented a paper entitled "Legal Aspects of Radiograms." As this paper, together with further material on the use of x-rays in dentistry will soon be prepared by Dr. Dorion for publication in the Journal, it will not be reported on at this time.

The meeting was held on Monday, April 27 at the Université de Montréal under the chairmanship of the President, Dr. J. P. Lantier. R.F.H.

A dinner meeting of **The Montreal Dental Club** was held on April 23 under the chairmanship of the President, Dr. M. L. Donigan. The clinician for the evening was Dr. Sam Cripps who spoke on "Occlusal Equilibrium." Dr. Cripps' paper was so enthusiastically received that he was requested to present it at the combined meeting of The Canadian Dental Association and The Annual Fall Clinic of The Montreal Dental Club to be held in Montreal October 18-21, 1953. As the paper will then be presented either in detail or in its entirety in a later issue of the Journal, it will not be reported on at this time.

Dr. J. Amyot was elected **President of the Royal Canadian Dental Corps Association** at a meeting held May 6, 1953 at the R.C.D.C. Armoury. Other officers elected for the coming year were: First Vice-President—Dr. H. M. Robichaud; Second Vice-President—Dr. R. F. Harvey; Secretary-Treasurer — Mr. I. F. Gimsgaard; Executive—Dr. S. Gouruff, Dr. F. A. Edward, Dr. R. T. Lamb, Dr. H. L. Mussels, Dr. E. T. Cleveland, and Dr. J. M. Chamard. Past President, Dr. H. T. Oliver, presided and introduced the guest speaker for the evening, Major Herbert F. Owen, B.A., M.D., C.M., M.C., F.R.C.S., whose subject was "Emergency Medical Treatment for the Dental Practitioner."

Dr. Owen was thanked by Dr. R. T. Lamb.

NOVA SCOTIA

The Annapolis Valley Dental Society was formed on April 15. Practising dentists from Valley centres between Wind- sor and Kingston were present.

Dr. Gordon Dawson, Department of Public Health, addressed the meeting on the subject "Fluoridation of Public Water Systems."

The following officers were elected: President — Dr. John Eaton, Kentville; Vice-President — Dr. J. Leadbetter, Berwick; Sec.-Treas. — Dr. R. H. Taylor, Wolfville; Executive member — Dr. Lin Comeau, Kentville. — Kentville Advertiser.

NEWFOUNDLAND

The Annual Dental Meeting of the **Newfoundland Dental Association** was held at Corner Brook on February 20. Members present were Drs. W. L. Goodwin, M. F. Hogan, E. P. Kavanagh, A. B. Kennedy, J. Langins, T. Harris, F. A. Janes, R. W. Ball, F. Mitchell, D. K. Peters, W. King and J. M. Darcy.

The President, Dr. W. L. Goodwin, welcomed all members present to the first Annual Meeting held outside St. John's. He felt that it signified more of a professional and less of a business trend in the meetings.

Reports were presented and received as follows:

1. Dr. W. King presented a report on the Annual Meeting of the C.D.A. at Vancouver last June.

2. Dr. E. P. Kavanagh, provincial registrar, presented the report of the Newfoundland Dental Board.

3. Dr. J. M. Darcy reported on Civil Defence Health Services.

Dr. R. W. Ball, Grand Falls, extended an invitation to attend the Maritime Dental Convention at Keltic Lodge in September 1953.

Dr. A. B. Kennedy, St. John's, occupied the chair for the election of officers which resulted as follows:

President — Dr. F. A. Janes, Corner Brook.

1st Vice-Pres.—Dr. G. E. Mallam, St. John's.

2nd Vice-Pres.—Dr. R. W. Ball, Grand Falls.

Secty.-Treas. — Dr. J. M. Darcy, St. John's.

The retiring Newfoundland Dental Board, consisting of Drs. E. P. Kavanagh, M. F. Hogan and A. B. Kennedy were congratulated on their work and their continued interest in Newfoundland dental matters. They were renominated for recommendation to the Newfoundland Government to serve another three years' term of office. Dr. W. L. Goodwin, Harbour Grace, was elected to be the Newfoundland Governor to the C.D.A., alternate Dr. F. A. Janes, Corner Brook.

Dr. R. W. Ball extended an invitation to attend the Annual Meeting at Grand Falls next year. Dr. M. F. Hogan suggested St. John's as an alternate.

During their stay at Corner Brook, visiting members were entertained at various social functions. The Annual Dental Dinner was held at the Glyn Mill Inn at which the guest speaker was Dr. Whitehurst of Bowaters' Paper and Pulp Mills at Corner Brook. G. E. Mallam

BRITISH COLUMBIA

Among the earliest and most Significant Trends in Graduate Dental Education on the West Coast has been the Study Club. The form of these groups in B.C. largely continues to follow that developed by Ferrier of Seattle. It has been aptly demonstrated over many years that a discussion group cannot equal the efficiency and continuity of

training provided by the now traditional Study Club. The procedure of working on the patient under detailed criticism at regular meeting times serves not only to develop an individual's skill in his own practice but also to stimulate his capacity for analytical thinking and to allow him to share the skills and enthusiasm of other men.

There are now **Seven Study Clubs** attended by approximately 90 men in the Victoria - Vancouver - New Westminster area and of these many men belong to more than one club. Such groups are a recognized source of clinicians for presentations in B.C., Washington and Oregon.

Most successful of these in continuity has been the Vancouver Ferrier Gold Foil Study Club with a history of 17 years of unflinching study of the restoration of teeth with this classical material. Next in seniority is the Intercity Gold Foil Club which has been operating for five years.

Most recent in formation are the Prosthodontics and the Inter-Pedodontics groups, both working under the direction of skilled mentors.

Largest of the clubs is the one studying endodontics with a membership of over thirty. While this is much greater than the number considered most efficient, the members have made many fine chair and table demonstrations involving conservative and radical methods of management of pulpless teeth.

The Oral Diagnosis Study Club, organized in 1951, has been concentrating largely on development of proficiency in the production and interpretation of the radiogram with other aspects of diagnosis to be studied later.

Very much in demand as clinicians have been the members of the Vancouver Pedodontics group now in its fourth year of study. The 1952-53 season included nine presentations in Seattle, Victoria, Bellingham, Portland, as well as in Vancouver and Chilliwack. Clinicians are currently travelling to the Western Canada meeting at Jasper and the Washington State Convention at Yakima.

In view of the expanding work of the Clubs and the value of their study to the public and profession alike, an effort has been initiated by the Vancouver Dental Society to provide well-equipped central facilities for the use of all of these groups. A substantial sum of money has been voted to this end, and every encouragement is being given both to keep up the enthusiasm and efforts of the new clubs and to foster the formation of others as the demand arises. B.C. dentists may be justifiably proud of the

standards and pace set by their Study Clubs.

R. J. O'Neil, Chairman of Study Clubs

The May meeting of the **Vancouver and District Dental Society** sets aside professional matters, and conducts only the necessary business. This year, one of Vancouver's most popular sports speakers addressed the meeting. Mr. Jack Lillington, better known as "Pintail" of the Vancouver *Province*, spoke on "Big Fish and Where to Catch Them."

The trouble with this sort of practice is that there is still dentistry to be done, in spite of the fact that spring has arrived and fishing is just about tops.

"Pintail" took us from the cut-throat trout, of two or three pounds, up to the tye of Rivers Inlet, where the average take is forty-five pounds; from the coastal waters, or salt-chuck, far up into the interior, where the sea-going trout, up to twenty pounds or more, may be taken on the fly in the North Thompson. Finally, he produced a photograph of an eighteen pound steelhead taken the day before from the famous Capilano River, less than ten minutes from downtown Vancouver.

At the election of officers, Dr. Geo. Creasy, incoming President, was presented to the meeting. Dr. D. H. Warren was elected President-elect; Dr. Wes Munsie as Secretary-Treasurer, and Drs. Cline and Bob O'Neil as Directors. Remaining Directors for another year are Drs. Max Nacht and Chas. Whitworth.

At the wind-up meeting of the **Fraser Valley Dental Society**, Dr. L. W. Beamish, of New Westminster gave a clinic on gold inlays.

The previous meeting enjoyed a clinical demonstration presented by three members of the Vancouver Pedodontia Study Club, Drs. Lorin Lind, A. A. Fraser and Max Nacht. These chair clinics were presented at the Medical-Dental Building, Chilliwack. Demonstrated were—an ideal MO preparation in a lower first permanent molar, as arrived at after two years of study by the Pedodontia Club; an ideal cavity in a lower second primary molar, and reconstruction of a badly broken down primary molar.

The **Annual Convention of the B.C. Dental Association** was held in the Hotel Vancouver, Vancouver, on May 8-9. Dentists attending numbered well over three hundred, and all parts of the Province were represented.

The meeting was opened by an address given by Dr. Chant, Professor of Philos-

ophy and Psychology of the University of British Columbia. Dr. Chant discussed the possibility of opening a school of dentistry in the University of B.C. He stressed the great cost of establishing such a school, but felt that the present development of the medical faculty, and future accommodation and equipment for that faculty would lessen the difficulties. Plans for the future would certainly take into consideration the need for a dental school, and it seemed probable that future buildings to house the health science departments would be planned to provide accommodation for a dental faculty.

During the balance of the first morning, Dean W. J. Simon, of the dental faculty of the State University of Iowa, spoke on "Thermogenesis in Cavity Preparation," and Dr. J. I. Ingle, Associate Professor of Periodontia, School of Dentistry of the University of Washington, at Seattle, discussed "Success or Failure — Endodontia."

Following the luncheon recess, a round table discussion on "The Use of Antibiotics in Dentistry" proved to be a novel and interesting method of dealing with this subject. The Moderator, Dr. Wm. Miller, of Vancouver, handled his task very creditably. Panel speakers were Dr. Murray Baird, Internist; Dr. Ben Kanee, Dermatologist; Dr. J. I. Ingle, Endodontist, and Dr. Robert Johnson, Oral Surgeon. The latter two were from the staff of the University of Washington at Seattle.

The Internist, though open to conviction, felt that there must still be some doubt as to the efficacy of root canal treatment of diseased teeth. Dr. Ingle presented a strong case in favour of such treatment, expressing the great satisfaction his department had experienced in the use of the penicillin, bacitracin, streptomycin and caprylate combination.

The Dermatologist dealt with the effects sometimes noticed following the use of certain antibiotics, particularly with regard to eruptions on the skin and mucous membranes. Slides were used to illustrate his part in the discussion.

From the interest shown in the question period following the fifteen minute addresses of the panel members, it would appear that this sort of discussion was most interesting and popular among the large crowd attending.

Chair and table clinics started at two o'clock in the same afternoon, and continued until after five.

Chair clinics were:

"Root Amputation, Apical Curettement and Filling in One Appointment."

Dr. S. F. Miles, of Victoria

"A Direct Wax Pattern for Anterior Three Quarter Crowns."

Dr. J. H. Merrell, of Vancouver

"Class Two Amalgam with Cusp Restoration."

Dr. E. L. Scharif, of Vancouver

"Class Two Alloy in First Permanent Molar."

Dr. A. A. Fraser, of West Vancouver

"Gold Foil Restoration, Class Three."

Dr. J. P. McPherson, of Victoria

"Amalgam Restoration."

Dr. A. Ian Hamilton, Seattle, Wash.

"Conservative Root Canal Filling for a Posterior Tooth."

Dr. J. Blair Wolfe, of Vancouver

"Rubber Dam Application."

Dr. D. A. Sprately of Mount Vernon, Wash.

"Gold Foil Restoration, Class Five."

Dr. J. C. Foote, of Victoria.

Table Clinics:

"Hydrocolloid Technique for Indirect Inlays."

Dr. J. Gansner, of Vancouver

"Interseptal Trimming and Preparation of the Ridges for Dentures."

Dr. J. A. Barber, of Chilliwack

"Efforts that Justify the Use of Amalgam."

Dr. Mark Abernethy, of Tacoma, Wash.

"Treatment of the Periodontal Abscess."

Dr. A. L. Ogilvie, of Seattle

"X-rays for the Orthodontist."

Dr. P. J. Rumball, of Victoria

"Public Relations."

Dr. W. P. Munsie, of Vancouver

"Contouring and Tinting of Dentures."

Dr. M. Pottinger, of Vancouver

"Some Uses of Prefabricated Gold Pins."

Drs. M. M. Chechik, B. M. Plumb, of Vancouver

"Exodontia and Oral Surgery."

Dr. H. E. Simmons, of Vancouver

"Prosthetics."

Drs. M. J. T. Dohan

R. L. Horne

B. Kjekstedt, of Victoria

"Extension Cone Adaptation, Radiation, Protection and Diagnosis."

Dr. F. L. Jacobson, of Seattle

A social hour at 7.00 p.m. was followed by dinner, dance and floor show at the Palomar Supper Club.

Saturday morning, Dr. Robert Johnson, Head of the Department of Oral Surgery at the University of Washington, lectured on "Oral Surgery in General Practice." Later in the morning, Dean Simon spoke again. His subject was "Alinate Impressions for Multiple Inlays."

Concurrently, a series of moving pictures ran throughout the morning, on various subjects.

At the noon luncheon of the B.C. Dental Association, Dr. Harold Turner, of Victoria, was presented to the members as the next president. Dr. Chas. M. Whitworth, of Vancouver is President-elect; Dr. M. T. Dohan, of Victoria was appointed Secretary, and Dr. D. J. Sutherland, of Vancouver, Treasurer. Directors elected are Drs. R. L. Horne, of Victoria, and D. H. Warren, of Vancouver. Dr. Frank Smith was re-elected to serve as

representative of the Association on the Cancer Clinic.

Dr. Les Marshall, retiring president, and his executive, committee chairmen and members, are to be congratulated on the tremendous volume of work accomplished during the past year. Of particular notice was the activity of the public relations committee, under the able chairmanship of Dr. Wes Munsie, of Vancouver. A test recording of a proposed broadcast on fluoridation was played to the meeting. Arrangements have been completed for a series of articles in the press on dental health. Many plans are under consideration for future activities of the committee, including speakers' panels; radio talks; press releases and all possible other methods of carrying the story of dental health to the people of the province.

Splendid work has been accomplished by the committees on Compensation Board fees; library; Health Insurance study; hospital; dental technicians, and bank credit plans.

Leslie G. Robinson

British Empire Games — The Vancouver and District Dental Society will set up a two-chair dental clinic to provide free emergency treatment for athletes during the British Empire Games in 1954. Dentists will donate their services and the Society will pay all costs of the clinic. A full-time dental assistant will be hired for the two months.—*News Herald*.

ALBERTA

Dr. H. E. Bedingfield and Dr. J. S. Stewart Made Honorary Members in Calgary Dental Society — On Monday, April 27, 1953, the *Calgary Dental Society* held its final meeting of the year and by so doing had one of the memorable meetings of all time.

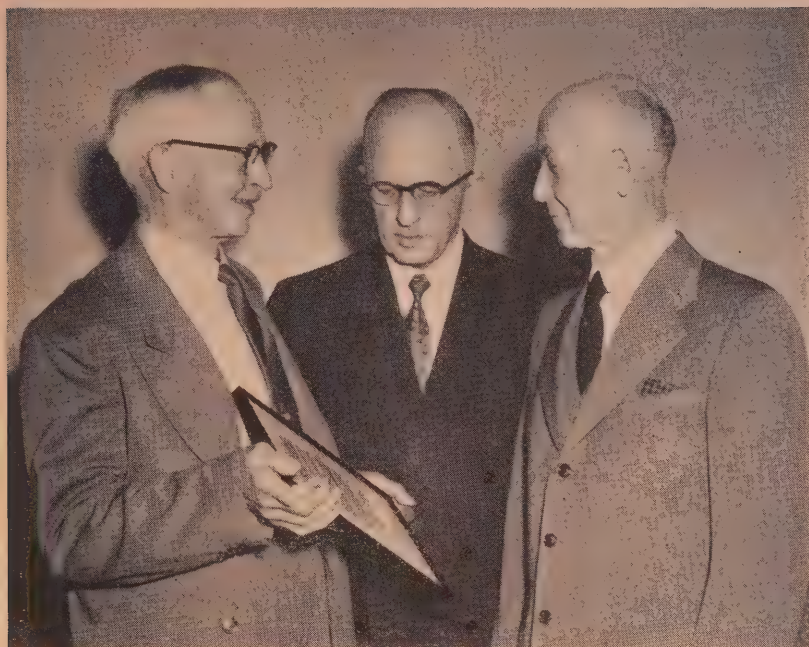
Dr. J. S. Stewart of Lethbridge was introduced by Dr. R. R. McIntyre who said: "Dr. John Smith Stewart was born in Brampton, Ontario on May 18, 1878. He came west to Edmonton in March, 1896, where he joined the Lord Strathcona Horse as a private. He saw service in South Africa from 1900-1901 and received the Queen's Medal—4 clasps. In 1902 Dr. Stewart went to Lethbridge. On May 14, 1902, he received the degree of L.D.S. at the University of Toronto. During the First Great War Dr. Stewart went overseas as major and O.C. of the 20th Battery C.E.F. and was promoted to Lt.-Col. and O.C. of the 7th and 4th Artillery Bgds. He then rose to the rank of Brigadier and O.C. of the 3rd Cana-

dian Division from 1917 to 1919. He received the D.S.O. in 1917, the C.M.G. in 1918, the French Croix de Guerre and was twice wounded and twice mentioned in dispatches. In 1907 Dr. Stewart married Jenny McClure. He was elected to the Alberta Legislature for Lethbridge by-election in 1911 and was re-elected in 1913, 1917, and 1921. In 1930 he was elected to the House of Commons. Dr. Stewart is a Freemason, a member of the United Church and an active member of the Lethbridge Kiwanis Club. In June 1951 the Lethbridge branch of the Canadian Legion renamed their chapter and building the "General Stewart Branch" Canadian Legion. Dr. Stewart is also an enthusiastic sport fan and keenly interested in curling and golf."

Dr. Stewart remained standing whilst Dr. H. L. Freeland introduced Dr. H. E. Bedingfield of High River with the following words: "Dr. Howard Ernest Bedingfield was born in Kempville, Ontario. He was graduated from the Royal College of Dental Surgeons, Toronto, in 1903. The following year he took post-graduate work in Chicago and then came to High River, Alberta, where he has practised his profession continuously until his retirement a year or so ago. In 1908 Dr. Bedingfield was married to Miss Leila Gould. Dr. Bedingfield well deserves the recognition of this Society in this special manner on this occasion just as he has earned the high esteem of his fellow citizens of High River and surrounding community. For nearly half a century he has been faithful and diligent in his professional capacity, and he has also found time to enter into the community life of High River. He has been, in every respect, a good citizen. He has exemplified those qualities of pioneer citizenship so typical of the West, and practised his profession with skill, understanding and kindness.

"In the community of High River, Dr. Bedingfield has rendered outstanding service and leadership. He has served on the School Board and on the Town Council. For twelve years he served as Mayor of High River.

"In the cultural life of the community, Dr. Bedingfield played an important part. He enjoyed music and organized the first band in High River. Together with Mrs. Bedingfield he stimulated and helped develop the musical talent of the community. He was, and is, a stamp collector of note. He has been a radio enthusiast, sports fan, fisherman, hunter, a worker in his church and community service organizations all his life. In short, this man whom we honour tonight has been one of these general all-round indispensable characters that every com-



TWO DISTINGUISHED ALBERTA DENTISTS HONOURED

Left to right:—Dr. H. E. Bedingfield, Dr. W. Scott Hamilton and Dr. J. S. Stewart at the Calgary Dental Society.

munity needs and too few possess. Someone has said 'Success is not a destination to be travelled to; it is the journey itself, and happiness is found along the way'. Dr. Bedingfield, in his personal and professional life, has adopted that principle as his guiding influence. We here, tonight honour him. It is our hope that many more years will be granted Dr. Bedingfield to enjoy the happiness he has earned."

Following these introductions, the President of the Calgary Dental Society presented Dr. Stewart and Dr. Bedingfield with Honorary Memberships in the Calgary Dental Society.

Dr. Stewart and Dr. Bedingfield thanked the Society for the honours bestowed upon them.

Dr. Bulyea of Edmonton, former head of the Dental School at the University of Alberta, then spoke flatteringly of the honoured guests. Dr. W. Scott Hamilton, Dean of the Faculty of Dentistry at the University of Alberta, then mentioned that he served as a corporal under Brig. Gen. Stewart in the First Great War. Dr. Hamilton said that the great

difference in rank did not prevent Dr. Stewart from standing down in the mud to allow the men to walk along the duck walk.

Dr. Leslie Allen of Lethbridge, former president of the C.D.A. spoke of these two great men.

At the business portion of the meeting Dr. James Zimmerman introduced Dr. H. R. McLean, President of the Alberta Dental Association to the meeting. Dr. McLean presented an outstanding address on "Dentistry's Position Today." He then went on to illustrate how the Alberta Dental Association was meeting present problems. He also laid down plans for future guidance.

Dr. McLean was thanked on behalf of the Society by Dr. C. S. Lea.

Lorne K. Brooks

The Calgary Dental Society was most fortunate in having as its guest clinician, Dr. H. M. Worth, of Vancouver on March 17, 1953.

Dr. Worth spoke in the afternoon on the subject of "Radiographic Interpretations of Pathological Changes of the

Bone." In the evening Dr. Worth spoke on "Radiographic Manifestations of Periodontal Lesions."

Dr. Worth was brought to Alberta by the Alberta Dental Association in conjunction with the Lethbridge, Calgary, Red Deer and Edmonton Dental Societies. He also addressed the students at the University of Alberta, Faculty of Dentistry, and enjoyed answering questions put forward by the keenly interested classes. The Board of Governors of the Alberta Dental Association adjourned their afternoon and evening session on Friday, March 20, so that they might be able to attend Dr. Worth's lectures.

The attendance registered at these four society meetings was sufficient to demonstrate the esteem in which Dr. Worth is held, but in addition to this many travelled to other society meetings to hear the lectures again.

His sacrifice was greatly appreciated by the dentists of Alberta and it is their sincere desire that they may again have the opportunity of listening to this great professor and radiologist.

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The Edmonton & District Dental Society held its final curling meet of the season on March 19, at the Alberta Avenue Curling Club. At the dinner in the club room the following prizes for the year were awarded:

First prize went to Dr. Jack Geddes' rink for not losing a game during the season. Other members of the rink were Dr. M. Stein, Dr. B. Eastwood and Dr. C. Cleall.

Second prize went to Dr. Gerry Gero-lomy's rink for only having one loss. The members of this team were Dr. V. Kuzyk, Dr. R. Hager and Dr. B. Low.

A special award was presented to Dr. Andy Deegan's rink for not winning a game. Other members of the team were Dr. C. Duke, Dr. K. Gordon and Dr. A. Olsen.

Highest score of the day (18) was won by Dr. M. M. Dunsworth, Dr. M. A. McIntyre, Dr. H. Wood and Chuck Dawe.

Low score of the day was won by Stan Shaw, Dick Mitchell, Dr. Al. Urban and Bert Sankey.

Hidden end was won by Dr. Vic Lloyd, Dr. E. Wilkinson, Dr. George Clarke and Al Burden.

Dr. Hollis Brown expressed the thanks of the members to Dr. E. Wilkinson for his untiring efforts in making the Dental Curling League the success it has been. It was announced that ice had been booked for next year and that the curl-

ing would be operated in the same manner as this year.

Congratulations were extended to Dr. J. Geddes for his success in the recent Travellers Car Bonspiel held in Edmonton. Dr. Geddes skipped the Glen Gray rink to an outstanding win and his rink were the proud recipients of four new cars.

The afternoon and evening clinic given by Dr. H. M. Worth was held in the Macdonald Hotel, Friday, March 21, 1953 at 2.30 p.m. There were seventy-five in attendance plus the senior class in Dentistry from the University of Alberta.

On completion of Dr. Worth's afternoon clinic, there followed a cocktail hour during which the film of the Grey Cup of 1952 was shown. Dr. Vic Lloyd spoke briefly on behalf of the Touch-down Club of which he is President this year.

After the dinner President Bill McIver announced guests and out of town members. They were Dr. Worth, our clinician; Members of the Alberta Board; Drs. Zimmerman and Upton of Calgary, Ahrens of Lethbridge, Husband of Red Deer, McMurray of Beaver Lodge, Page of Stettler, and our local members Hec McLean and Phil Kendal. Also introduced were Dr. John W. Clay and Dr. R. R. McIntyre of Calgary, and Dr. Lorne K. Brooks, President of the Calgary Society. Other guests were Miss Joyce Neufeld, Dental Hygienist, Dr. Bulyea, Dr. Duggan, Radiologist at the University Hospital, and Dr. Haryett, Orthodontist from Toronto. Out of town members were Drs. Johnston, Campbell, Janzen, Holmes and Dunbar.

President Bill McIver made the following announcements: Dr. Jack Calvert is going to the Coronation in association with the Reserve Army. The late Dr. Hoar donated \$500.00 to the Benevolent Fund of the Alberta Board. F. Gowda, speaking for Dr. Phil Kendal, chairman of the Portrait Committee, appealed for generous donations so that the portraits of Drs. Bulyea and Gilchrist could be completed. Andy Revell gave notice of motion for Honorary Life Membership in the Edmonton Society proposing M. H. McIntyre, C. E. Eastwood, R. S. Decker, T. F. McDonald, and J. B. Carmichael.

At the conclusion of the business meeting, Dr. Worth then presented his evening clinic. Dr. Ken McMurchy thanked Dr. Worth on behalf of the Society.

The Edmonton & District Dental Society concluded its curling for the winter by sponsoring a one-day bonspiel with the Academy of Medicine, on April 1. It was the first time this had been attempted but judging from the success of the bon-

spiel it will be an annual affair. There were eight rinks consisting of thirty-two players from each organization and each played three games, one in the morning and two in the afternoon. Luncheon was served at noon with a banquet following the afternoon games.

From the results it is quite apparent that the dentists neglect their practices for curling more than the doctors. Of the twenty-four games played, the score was Dents 19 and Meds 5.

Don McIntyre presented a trophy which is to be competed for annually at this event. For the next year it will be in the possession of Dr. E. Wilkinson, our curling convener, who did such a fine job with the curling arrangements. Dr. Walter Anderson handled the details for the doctors.

SASKATCHEWAN

The Saskatchewan Dental Association has as the new executive officers:

President—Dr. A. M. Lowey; 1st Vice-Pres.—Dr. A. F. Muirhead; 2nd Vice-Pres.—Dr. G. G. Beesley; Treasurer—Dr. L. W. Miller; Secretary—Dr. Ted Bradley; Ex-Officio—Dr. Duff Leask.

This entire executive are members of the Moose Jaw Society, and have recently taken over from the Saskatoon men, namely:

Dr. C. B. Hallett, Pres.; Dr. S. R. Gelmon, Dr. R. E. Dickson, Dr. F. A. Fernet, Dr. A. Singer, Dr. R. V. Little.

The new executive plan on continuing the same policy that was followed by the previous executive, that of bringing clinicians to various parts of the province. This program proved to be very beneficial to the members of the profession and congratulations are extended to the retiring officers and good wishes extended to the incoming officers.

L.D.H.

Dental Hygienist Bursaries Offered —

Three bursaries for the training of dental hygienists under the professional training grants scheme for 1953 have been announced by the Saskatchewan health minister. These bursaries provide for a two-year course in the Univ. of Toronto to commence in September. The expenses of travel, tuition, books and a reasonable sustenance allowance will be covered.—Saskatoon Star-Phoenix.

MANITOBA

The best attendance of the year greeted the "Home Talent" who were the clinicians for **Winnipeg Dental Society's** last meeting of the season.

Dr. H. J. Merkeley and Dr. Joe Freeman were the speakers for the morning session. Dr. Merkeley, on Prosthetics, presented the material he gave to the International Federation of Dentists in London, England, last summer. He received the same warm reception at home that was accorded him at that time. Dr. Freeman, with movies of his own work and a lecture, covered many phases of practical exodontia for a large and keenly interested group.

The afternoon session started off with clinics on X-Ray Technique by "A" Study Group and Endodontia by Dr. I. Wolch, followed by table clinics by Dr. H. Kahanovitch — Prosthetics; Dr. G. Campbell—Acrylic Bite Planes; Dr. L. Soloway — Hydrocolloid Impressions for Crown and Bridge Work; Dr. E. Colson —Air Dent Technique; Dr. Brownlee — Correct Time for Orthodontia Treatment; Dr. A. Shinoff—Brush on Technique for Plastic Fillings.

No better compliment can be paid these men than the respect and interest shown by their fellow confrères. It is a stimulating experience to see the results of so much thought and preparation presented, by the dentist whom you know well and who perhaps has his office in your own building or across the street.

The annual business meeting and election of officers for the 1953-54 season took place following the luncheon. Committee chairmen made interim reports on the following subjects: "Hospitalization Benefits for Dental Cases," "A Recommended Scale of Fees," "Certification of Specialists," and the "Summer Golf Program." These reports pointed up the fact that the clinical program was only a part of the season's activities.

The President, Dr. F. Jones, in his report, covered the year's activities commenting on the high calibre of clinicians and the record membership in the society.

The following officers were elected for the coming year:

Past President—Dr. F. Jones; President—Dr. A. V. Johnson; Vice-President—Dr. T. J. Cooke; Clinic Chairman—Dr. Z. Kasloff; Sec.-Treasurer—Dr. G. Campbell; Committee—Dr. W. Grenkow, Dr. M. Averbach. T.J.C.

ONTARIO

The **Ontario Campaign to Secure Funds for Dental Research** is making outstanding progress. When the campaign was being developed, it was sometimes intimated that the dentists of Ontario lacked sympathy and generosity. The Committee was repeatedly challeng-

ed by the questions—Is the dental profession really anxious to deal with dental disease as a public health problem? Isn't it reasonable to expect the dentists themselves to contribute to dental research before asking others to provide financial support?

The challenge has been made—the questions are answered. The response has established what may be a world record. So far as we have been able to ascertain no other group of professional people has ever contributed so well in support of its own research efforts. Up-to-date the dentists of Ontario have pledged to contribute \$120,492.95 during the next five years. And when all contributions are in, it is expected the total will be even more impressive.

The most thrilling single event of the campaign was provided by the undergraduate dental students including the Dental Hygienists. Voluntarily they organized their own campaign and from his or her meagre personal funds, every single student contributed.

Other groups which have the highest percentage of Contributors are: The Toronto chapter of Alpha Omega Fraternity—(Society of Jewish Dentists)—and the Hamilton Dental Association. The final record of achievement of the various local campaigns will probably be published next autumn.

Now that the dentists of Ontario have set such a splendid example, other graduates of the Faculty of Dentistry, University of Toronto residing elsewhere in Canada and in Europe, Asia, Africa, Australia and New Zealand are being given an opportunity to participate in the fund.

Mr. George M. Black, Jr., one of Canada's most brilliant young businessmen, has agreed to direct the program by which the total objective of \$300,000.00 may be achieved. The accomplishment of the dental profession should ensure enthusiastic support from corporations, foundations and wealthy individuals.

All of the money raised by the campaign is deposited with the Bursar of the University of Toronto. It will be expended on the basis of annual budgets prepared for the Division of Dental Research by the Dean of the Faculty.

A committee of the Faculty of Dentistry, which is known as the Research Advisory Committee, has been established. It will be composed of the Dean of the Faculty, the Chairman of the Division of Dental Research, and the executive secretary—all ex-officio, and as elected members, one representative of the Ontario Dental Association, one from the Royal College of Dental Surgeons of Ontario, one from the Faculty of Dentistry, Toronto and one businessman.

The terms of reference for the Committee are:

- A. The Committee shall receive,
 1. a report from the Dean, not later than June 30 of each year stating the gross amount of the proposed budget for the following fiscal year.
 2. an annual report from the Chairman of the Division of Dental Research.
 3. copies of all manuscripts reporting results of research undertaken within the Division of Dental Research.
- B. The Committee shall be responsible for informing the profession concerning the Division of Dental Research in respect to its objectives, progress and results of investigations, the status of the Dental Research Fund and such other matters as may be in the best interests of the promotion of research.
- C. The Committee shall be responsible for maintaining the continuity of contributions to the Dental Research Fund and for the development of new sources of funds.

Details of financial administration within the division of Dental Research will be the same as for all other university departments.

Two types of research projects will be conducted within the division. Long-term studies will be devoted to development of basic knowledge concerning dental health and disease. Short-term experiments will be devoted, in the main, to testing ideas and methods.

Everyone who has served on a committee of this campaign and everyone who has contributed to the fund may be proud of the record which is being established. Canadians today are expected to provide leadership. The dentists of Ontario have demonstrated their willingness and ability to assume their share of leadership in an attack on the most widespread of all diseases—dental diseases.

C. H. M. Williams

•
The Toronto Faculty of Dentistry news letter announces "The First Fellowship in the Faculty of Dentistry is made possible by the munificent action of the Ontario Dental Association. This fellowship of the value of \$500.00 will be known as the Ontario Dental Association Graduate Fellowship, and will be awarded annually to a graduate of this faculty resident in the province of Ontario, and who enrolls in the University of Toronto and proceeds toward a postgraduate diploma of a graduate degree in dentistry on the basis of scholarship and financial need."

■
The 1952 Fones Medal has been awarded to Dr. Harold K. Box, Professor of



GRADUATING CLASS IN DENTAL NURSING, SESSION 1952-53

Front row (left to right)—Carolyn Eaton, Rose Mori, Helen Bedell, Mary Long, Mary Stickel, Muriel Walker, Jane Applegath, Joan Kolodzie, Delphine Goldstein
Second row—Clare Cameron, Joan Doughty, Greta Pearson, Shirley Linington, Estelle Morrow, Ruth Cameron, Jean Kingman, Marion Challis, Jean Carrothers, Marilyn MacInnes.
Third row—Mary Mackey, Margaret Willett, Elizabeth McIntyre, Louise Haselton, Margaret Little, Joan Kalbhoff, Doris Wood, Marilyn Chadwick.
Barbara Mueller absent due to illness.

Periodontology in the Faculty of Dentistry, Toronto. The officers of the Connecticut State Dental Association make this award annually to commemorate the name of Dr. Alfred C. Fones and his work in Oral Hygiene and Preventive Dentistry. This award is made to "an outstanding dental practitioner who in the judgment of the Council on post-graduate studies and awards has contributed outstanding service to the dental profession." Dr. Box attended the annual meeting of the Connecticut State Dental Association at Hartford on May 21 when the presentation was made to him following his address on "Oral Sep-sis."—Congratulations Dr. Box.

Mrs. J. E. Verth, President of the Ladies' Auxiliary to the Academy of Dentistry, received members and friends at the annual luncheon and election of officers held at Prince Arthur House, April 13. The guest of honour was Dr. E. J. Henderson, President of the Academy of Dentistry. Mrs. T. L. Crossley gave a book review.

Excerpts from the President's Message

As our year draws to a close I wish to tell you that this has been an exceed-

ingly happy year for me—because of a loyal, hard-working executive and appreciative members. We began our year in a spirit of co-operation, genuine friendliness and of a belonging to one large family. We believe this is the nucleus to a successful organization.

Our finances have been in good condition and because of this and the co-operation of our members we were able to make two new donations, Dental Research and the Dental Clinic at the Hospital for Sick Children. It is a fact the Ladies' Auxiliary to the Academy of Dentistry is now a recognized part of Dentistry in a philanthropic way. I feel that the members may be interested in knowing the contributions we have made since 1947.

Dean of Dentistry, West Union University, Chengtu, China	\$ 150.00
Children's Aid Dental Clinic (bonds and interest to date)	\$3266.92
Winnipeg Flood Relief	\$ 100.00
Ladies' Dental Auxiliary fund University of Toronto (dental project) ..	\$3073.29
Dental Research, Faculty of Dentistry Hospital for Sick Children, Dental Clinic	\$ 100.00

\$6890.21

(Mrs. J. E.) Edna Verth
President.

OFFICERS FOR 1953-54

Honorary member	Mrs. R. G. Ellis
Past President	Mrs. J. E. Verth

President Mrs. K. M. McPherson
 First Vice-President Mrs. H. J. Mullett
 Second Vice-President ... Mrs. W. C. McLean
 Recording Secretary ... Mrs. E. P. Downton
 Corresponding Secretary Mrs. W. T. McIntosh
 Treasurer Mrs. J. G. Chalmers
 Councillors:—Mrs. E. J. Henderson, Mrs. J. C. Lindsay, Mrs. H. S. Grey, Mrs. W. J. S. Jackson, Mrs. J. H. Mullett, and Mrs. J. E. Tilson.

•
 The third dinner meeting of the **Sudbury and District Dental Society** was

held in the Legion Memorial Hall on April 1. Dr. George Morgan, well-known oral surgeon of Toronto, was the guest clinician. Through the use of slides, coloured movies and a summary entitled "101 Practical Tips for Oral Surgery", Dr. Morgan gave a very worthwhile clinic.

Dr. H. Laberge thanked Dr. Morgan for his interesting presentation.

G. P. Copeland

BRITISH COMMONWEALTH NEWS

GREAT BRITAIN

The Retirement of Dr. Bryan J. Wood:

—It has been announced officially that at the end of this month Dr. Bryan J. Wood, the distinguished editor of the *British Dental Journal*, will retire from office. During many years Dr. Wood has performed his duties as editor in an exemplary manner and by the high ideals so ably depicted in this publication he has had much to do in raising the profession of dentistry in his country to great heights of achievement. Nor has his influence been limited to his own country, for he has been an inspiration to many far beyond the confines of his own land.

Dr. Wood's work as editor has been characterized by true mastery which is a compact of supreme qualities, namely, culture, enthusiasm, faith, intelligence, endurance and conviction.

Dr. Wood has given character to the dental structure before and since he became editor. His work will live after him and as to his thoughts, his dreams, his hopes, his prayers and tears, we would commit them all into the hands of a God who never slumbers nor sleeps.

M. H. G.

■
Professional Prospects: The editor of *Dental Record* writes as follows in his March issue on the condition of dental practice in Great Britain:

"Dentistry at the moment is poised on the lip of the melting pot; into which mould will the hand of authority cast it? Authority, in this case, is Parliamentary and Ministerial direction and their choice of moulds has not so far been a happy one. A profession, with its particular client-practitioner relationship, is even less susceptible than a business to central control, and the rubber stamp obliterates more than it endorses.

"Professionally we have lost much ground. Ministerial assurances of concern for priority classes have proved to be nothing but pious hopes, and professional offers to help have been turned down because dentists cannot afford to

keep idle establishments while working at clinics for clinic fees; practitioners of repute are prevented from giving to N.H.S. patients necessary treatment out of the common run; incomes earned by long hours of work have been misquoted and used as an argument for the depression of fees.

"The harvest of this intemperate sowing is ripening. The numbers of entrants to the dental schools is now approaching the pre-war level; and equally bad is the fact that hundreds of men qualified in recent years are enquiring of dental organizations abroad how they can escape to professional freedom.

"These matters will not be corrected by lowering the standards of qualification; it is necessary that dentistry shall be made more attractive both financially and professionally. There is no harder work than conservative dentistry; there is no other form of general practice in any brand of medicine which costs so much to conduct, and a modern dental practice lies in this respect somewhere between general medical practice and a hospital. Consultation and advice need little room, a small staff and the minimum of equipment. Operative treatment requires ample room, a more highly trained and more numerous staff and elaborate equipment.

"Further, it is necessary to encourage continuously the raising of standards of professional skill and to use all means which will enable the schools to select their students, for a profession is best served by those who have competed for entry.

"The members of the profession must themselves take stock of their responsibilities and use their influence in administrative circles in any way they can, for in the fog which has so far surrounded the principles and actions of each Government which has dealt with dental services it is about as useful to look for a sensible and steadfast policy as it would be to seek a ghost in a Turkish bath."

GENERAL NEWS



"Oh, come now—I KNOW you can do better than that!"

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Evidence Favouring Fluoridation Continues to Mount:—Resolutions passed last month by two of dentistry's leading scientific agencies, decisions made by two of the country's larger cities and reports presented by two different groups of researchers strengthen the already sound position of proponents of water fluoridation. The Council on Dental Research, April 10, after a re-evaluation of evidence, reaffirmed its support of fluoridation as a dental health measure and commended departments of public health for their scientific contributions to the problem of caries control through fluoridation. The Council on Dental Health on April 14 restated its support of fluoridation as a safe anticariogenic measure, pointing out that the volume of accumulated scientific data has established beyond any reasonable doubt both its safety and efficiency. Milwaukee citizens on April 7 by referendum overwhelmingly approved fluoridation, and Cincinnati by an eight to one vote of its city council on April 1 decided similarly. Three researchers from the University of Rochester reported on April 7 that "if all fluoride in drinking water containing one part per million fluorine were to be deposited in the skeleton, the situation would be perfectly safe." And lastly, a Yale University School of Medi-

cine scientist again scotched the rumour that fluoridation of water increases the incidence of cancer by reporting to the International Association for Dental Research, March 20, that tumours transplanted into mice developed more slowly if the mice received fluoride. Thus the scientific evidence mounts monthly in favour of fluoridation, leaving to opponents of the process only vapid arguments based either on emotionalism or misinformation.—Editorial in *Jour. of A.D.A.*, May 1950.

Increase in Malpractice Suits in the U.S.A.: "A physician said February 28 the number of malpractice suits filed against doctors has increased to about 4,000 a year and is tending to break down public confidence in the profession. Dr. Luis J. Regan of California said the number of legal cases against doctors for malpractice had reached a 'shocking level.' He said ill will, engendered by the great number of unjust malpractice suits, has tended to break down confidence. 'So, too, the confidence of the individual patient in his physician has been weakened.'

"Regan said that the majority of the legal actions filed against physicians were 'without meritorious foundation,' that greater competition and economic stress in the last 20 years probably was a reason for more legal actions. Other factors he said were the breakdown of the traditional patient-general practitioner relationship and the increased 'suit-consciousness' of the public."—*Ann Arbor News*, February 28, 1953.

Dental Health: In the February issue of the Canadian *Journal of Public Health* A. B. Sutherland, D.D.S., D.D.Ph., Dental Officer of the Department of Public Health, Sudbury, Ontario, summarizes his address as follows:

"Dental health is a public health problem in which dental caries is the most important factor.

"The rational approach is through the child.

"Fluoridation offers a measure of partial control.

"Treatment must complement education.

"Educational material must be factual, forthright and forceful.

"We have in Canada a dental problem the extent of which, in terms of cost and personnel to deal with it, is unknown. Until personnel are available and committed to deal with an incidence

rather than offer futile struggle against a prevalence, it will so remain.

"A public health problem is recognized, but it is recognized also that public health does not have recourse to adequate facilities for meeting it.

"It is sought to demonstrate that, through the provision of adequate pre-school care, lasting improvement can be made in the dental health of the adult population."

The American Dental Association Issues New Dental Health Comic Book:

The third dental health comic book in the "Daredevil Davey" series is now available from the Order Department of the Association. Entitled "Underwater Agent H₂O," it interprets the story of fluoridation for children under 16 years of age.

The first booklet in the series, "The Amazing Adventures of Daredevil Davey," is now in its second printing of 50,000 copies.

IN MEMORIAM

William Frederick Lasby, dean of the University of Minnesota School of Dentistry from 1928 to 1945, died April 12 in Santa Ana, Calif., at the age of 77 years.

During the administration of Dr. Lasby, a new building was erected for the Dental School, and graduate work leading to advanced degrees was added to the educational program in dentistry.

Dr. Chamberlain is survived by his widow, three daughters and one son.

Gerald Horace Braden of Hamilton, Ontario died on May 2 at the age of 53. Dr. Braden was graduated from the Faculty of Dentistry University of Toronto in 1926. He has always practised in Hamilton since graduation.

Dr. Braden is survived by his widow, one daughter and one son.

Charles Hedgers Chamberlain of Scotland, Ontario died on April 30 at the age of 72. Dr. Chamberlain was graduated from the College of Dentistry of the Royal College of Dental Surgeons of Ontario in 1910.

William H. Wisse of Montreal, Quebec, aged 58, died of a coronary in his office on February 12. He was graduated from the McGill University and practised in Montreal.

Dr. Wisse is survived by his widow, two daughters and a son.

DIRECTORY

Canadian Dental Association Headquarters—234 St. George Street, Toronto, Ontario.

Matters relating to the publication of manuscripts or news items for the English Section of the Journal should be addressed to the Editor-in-Chief, 234 St. George Street, Toronto, Ontario.

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Le Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

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Pédiatrie et hygiène dentaire

par M. LANGLOIS, M.D., Québec

Professeur titulaire à la Faculté de Médecine de Laval

Directeur du Service d'hygiène maternelle et infantile

Le succès remporté par la semaine hygiène dentaire a dépassé toutes les prévisions et il convient de souligner le généreux exemple qui a été donné par tous et chacun des membres de la profession dentaire. Une telle contribution à la cause de l'hygiène publique devrait être répétée et imitée le plus souvent possible.

Il ne faut pas avoir pratiqué longtemps la pédiatrie, avant de se rendre compte que la santé de l'enfant dépend peut-être autant du niveau atteint par l'éducation en hygiène, que de l'application de mesures individuellement requises. C'est ainsi, par exemple, que l'expansion de l'éducation en hygiène maternelle contribue à rendre la femme enceinte, plus consciente de ses responsabilités et plus accessible à la mise en application des mesures préconisées pour diminuer les risques et les complications qui pourraient résulter de son état.

Tous savent que ce sont surtout les efforts d'éducation qui ont contribué le plus aux réalisations subséquentes, qui ont doté les bénéficiaires d'une meilleure santé, et qui ont permis d'établir des points d'évaluation ou de comparaison entre les divers pays. On peut même ajouter que c'est la pédiatrie qui a contribué le plus à diffuser l'éducation en hygiène.

Présenté à la Société de Stomatologie de Québec, le 18 avril 1953.

Jour. A.D.C., juin, 1953

Bien avant la naissance, le pédiâtre est obligé d'apprécier toutes les implications de l'hérédité et de l'eugénisme tout autant que celles de l'hygiène pré-natale, sur la santé de l'enfant. Tous les facteurs contributifs à une bonne santé doivent être connus ou tout au moins soupçonnés, au même degré que devront l'être tous ceux qui seraient détritimentaires. Le pédiâtre n'est certes pas en mesure de les contrôler tous également, mais ce sont ceux qu'il peut contrôler qui lui ouvrent toute grande la voie qui conduit aux multiples aspects d'une hygiène particulière à l'enfant.

Pour ces motifs et pour bien d'autres encore, l'on conçoit facilement que le pédiâtre connaît mieux que tout autre l'importance de l'éducation sur l'hygiène en général et surtout sur l'hygiène conceptionnelle, pré-natale, post-natale, pré-scolaire, scolaire, alimentaire et mentale. Tous les jours de sa vie et plusieurs fois le jour, il est appelé à diffuser quelques-unes de ces notions et plus souvent encore à les infuser. D'une porte à l'autre, chez les riches comme chez les moins riches, chez ceux qui en savent plus tout comme chez ceux qui en savent moins, il ne soigne jamais un enfant sans laisser tomber quelque semence d'hygiène. Cette graine se développera, atteindra parfois d'autres membres de la famille, et même peut-être se transmettra-t-elle d'une génération à une autre. Semence de qualité

variable, bonne ou douteuse, vraie ou fausse, elle fait tache d'huile, et finit par s'implanter pour de bon dans l'opinion publique, d'où il est parfois très difficile de la déraciner. C'est ainsi que finissent par se confondre, vérités et préjugés, légendes et histoires, prévention et scrupule. Un tel jeu et la progression phénoménale de toutes les sciences, nous forcent à toujours recommencer. Ces perpétuels recommencements, et corrections forcent le pédiâtre, peut-être plus que tout autre, à prendre conscience de l'importance primordiale de la diffusion des notions d'hygiène dont l'exactitude demande toujours à être contrôlée.

Que dire du secteur dentaire en hygiène infantile? Le pédiâtre s'en occupe-t-il suffisamment, lui qui, peut mieux que nul autre suivre le développement des incidents et accidents de la dentition chez l'enfant? Toujours, il ouvre la bouche pour examiner la gorge, la langue et les muqueuses, mais combien de fois se laisse-t-il distraire par les dents? A combien de reprises a-t-il envoyé un enfant chez son dentiste—ou encore s'est-il privé de le faire, certain à l'avance qu'une extraction prématurée s'en suivrait? Quoi qu'il en soit, on peut affirmer que l'hygiène médico-dentaire n'a sûrement pas reçu en notre milieu le degré de collaboration médico-dentaire qu'elle exige et qui est indispensable à son plein épanouissement.

C'est ici que doivent se rencontrer dentiste et pédiâtre. De plus en plus celui-ci est investi de la confiance de la famille et, à cause de cela, il est le plus souvent consulté au sujet de tout ce qui est du domaine physique de l'enfant.

Même si on ne doit pas s'attendre à ce que le pédiâtre aie la compétence requise pour faire un examen définitif de la bouche, il n'est pas déraisonnable d'exiger de lui des connaissances suffisantes à dépister et à reconnaître certaines anomalies ou déformations grossières qui lui permettront de référer l'enfant au dentiste.

Il n'y a pas lieu de discuter ici longuement de l'âge d'apparition des dents de la première dentition. Cette question se pose toujours sur un plan individuel, biologique et physiologique, pas toujours

en accord, il est vrai, avec un plan chronologique où il s'agit de moyennes, obtenues empiriquement. Certains facteurs héréditaires ou acquis tels que des troubles endocriniens imputables à la thyroïde, à la parathyroïde et à la glande pituitaire peuvent influencer le moment d'apparition des dents, mais là n'est pas un problème d'importance.

Quant à l'ordre d'apparition, le problème est quelque peu différent. La plupart du temps lorsque cet ordre est interverti, il faut reconnaître une cause locale surtout s'il s'agit de la présence de dents surnuméraires, décelables aux R.X. seulement. Toute anomalie d'apparition devrait donc inciter le pédiâtre ou le dentiste averti à exiger une radiographie.

Quant au problème de la carie dentaire, on ne peut l'aborder sans admettre qu'il atteigne une telle ampleur qu'il constitue un défi à tous ceux qui s'intéressent à la santé publique. En premier lieu, il faut reconnaître que le nombre de dentistes est encore trop restreint pour satisfaire à tous les besoins dentaires de la population. En second lieu, il faut toujours penser à distinguer entre

"La prévention de la carie et le contrôle de la carie."

A ce sujet, Maury Massler, D.D.S., M.S., professeur de pédodontie post-scolaire au collège dentaire de l'Université d'Illinois a écrit:

"La prévention de la carie tend à prévenir l'initiation de la carie à la surface de la dent. Elle se résume à prévenir la formation de nouvelles érosions de l'émail. A l'opposé, le contrôle de la carie a trait au ralentissement ou à l'arrêt de toute lésion déjà constituée sur la dent. En finale, le contrôle tend à protéger la dentine plutôt que l'émail."

"Le contrôle de la carie intéresse le dentiste et le médecin, tandis que la prévention intéresse surtout l'hygiéniste."

Cette distinction est de première importance puisqu'elle nous aide à mieux partager tâches et responsabilités, et à mieux orienter le travail à accomplir. Depuis dix ans surtout la littérature à ce su-

jet est considérable, et il faut se contenter de n'en retenir que les points dominants. Le tableau suivant emprunté à Massler en donne une excellente idée.

I. METHODES DE CONTROLE

- A. Le traitement dentaire
- B. Contrôle de la carie vs le contrôle du sucre
- C. Caries et nutrition

II. METHODES DE PREVENTION

- A. Facteurs génétiques dans la carie. Début de carie vs son progrès
- B. Hygiène de la bouche et carie
- C. Fluorides et caries
 - 1. Fluorides par voies organiques
 - a) Fluorides naturels dans l'eau et l'hypothèse de la carie par fluoride
 - b) Fluorides synthétiques
 - 1) Addition à l'eau de boisson
 - 2) Pastilles à prendre par la bouche
 - 2. L'application locale de fluorides
 - a) Mécanisme de l'action des fluorides
 - b) Applications topiques (par le dentiste)

En partant d'un tel schéma, il est plus facile d'envisager, selon leur ordre, certaines considérations d'intérêt commun aux dentistes, aux pédiâtres et aux hygiénistes.

METHODES DE CONTROLE

Au premier rang des méthodes de contrôle, figure le traitement par le dentiste, à condition que celui-ci voie le malade à temps opportun. On ne saurait trop insister sur l'importance de ce fait, même s'il est déjà largement connu et diffusé. Il y a encore trop d'insouciance tant de la part du public que de celle du pédiâtre. Trop de fois encore s'imaginent-on que la carie est un phénomène exclusivement réservé à l'adolescence ou à l'âge adulte. Plus souvent qu'il se doit, oublie-t-on encore, que si tout amorce de carie était traitée à point, elle n'aboutirait pas si fréquemment à une prothèse prématurée. Peut-être aussi verrions-nous dimi-

nuer la fréquence des infections régionales ou organique à point de départ dentaire.

Au second rang des méthodes de contrôle, se situe la limitation des sucres raffinés dans l'alimentation. Il a été amplement démontré que non seulement ils favorisent la carie, mais aussi que leur privation arrête une carie déjà amorcée. A ce propos il est intéressant de prendre connaissance des observations de nombreux auteurs, qui ont réussi à établir un parallélisme assez étroit entre la consommation du sucre et la carie dentaire en Europe pendant la guerre. Krohn et Pedersen, en 1945, avaient observé une réduction marquée et progressive du nombre de caries par personne à mesure que se faisait sentir la rareté du sucre. Sognaes en 1948 et Toverud en 1949 ont rapporté que la carie augmentait dans certains pays dès que l'approvisionnement en sucre redevenait plus abondant. Ce fut entre autres le cas de l'Angleterre, la Hollande, la Suède et la Norvège. Schour et Massler, en 1947, ont pu démontrer que la courbe du nombre de caries par personne dans un pays donné est en fonction directe de la consommation du sucre. C'est ainsi qu'aux Etats-Unis, en 1948, la consommation moyenne par personne a été de 142 livres de sucre au lieu de la norme de 40 livres, considérée comme suffisante à couvrir tous les besoins énergétiques. Au contraire en Italie, où la consommation en sucre est la plus faible du monde, il n'y a pratiquement pas de carie.

Suffisamment concluantes en soi, il ne faut pas oublier que ces données s'appliquent aux multiples modalités de la consommation en sucre. Il ne s'agit pas ici exclusivement de sucre raffiné chimiquement pur, mais aussi de toutes les friandises qui en contiennent et dont l'abus a été introduit dans nos moeurs. Le problème du rationnement du sucre serait de beaucoup facilité si on pouvait s'en tenir au sucre raffiné seulement, mais il devient beaucoup plus complexe lorsqu'il s'agit de s'insurger contre un usage social, une exigence que savent satisfaire à leur légitime profit les fabri-

cants de bonbons et de liqueurs douces. Pour enrayer certains abus, dentistes, médecins et hygiénistes devront persévérer et lutter d'autant plus fort que l'ennemi est mieux retranché.

La route à parcourir demeurera d'autant plus ardue qu'il faudra démolir ou modifier l'habitude en soi inoffensive, qui consiste à absorber entre les repas du sucre ou son équivalent. A ce propos, j'ai cru intéressant de vous signaler quelques équivalences qui, à première vue, peuvent surprendre.

- 1 morceau de gomme à mâcher d'un centin
contient $\frac{1}{2}$ c. à thé de sucre
- 1 beigne de 3 pouces de diamètre
contient 4 c. à thé de sucre
- $\frac{1}{2}$ tasse de gélatine
contient 4 c. à thé de sucre
- $\frac{1}{8}$ de pinte de crème glacée
contient 5 à 6 c. thé de sucre
- 6 onces de ginger ale
contiennent $\frac{1}{2}$ c. à thé de sucre
- 6 onces de coca cola
contiennent $\frac{3}{2}$ c. à thé de sucre
- $\frac{1}{2}$ tasse de sauce aux pommes sans sucre
ajouté
contient 2 c. à thé de sucre.

Toutes ces données ne sont pas nouvelles, mais elles servent à mieux illustrer la part que devrait prendre le pédiatre dans une campagne que préconise depuis longtemps déjà le dentiste. C'est autant un problème de saine nutrition que de pure prophylaxie dentaire.

Au troisième rang des méthodes de contrôle de la carie, apparait la nutrition. Trop de fois, tant dans les traités médicaux que dentaires, on a préconisé des régimes pouvant avoir un effet salulaire sur la carie. Sans avoir à les énumérer, on peut soutenir que ces affirmations ne résistent pas toutes à une critique sévère. Tous les pédiatres savent bien que l'enfant rachitique ou mal nourri n'en est pas pour cela plus exposé à la carie dentaire ou à son extension. Au contraire, c'est à se demander si ça ne lui vaut pas une espèce de protection.

Toujours au chapitre de la nutrition, il convient de signaler l'importance indue encore attachée aux gallons de lait

et aux tonnes de calcium que doivent absorber mère et enfant. Au cours des 20 dernières années, les résultats n'ont pas confirmé le bien fondé de ces mesures, puisque la carie dentaire demeure en progression. De telles ordonnances constituent une fausse sécurité qui risque de masquer la continuation de la carie. Il en est ainsi de la vitamine D. Ceci n'infirme en rien la valeur du lait, du calcium et de la vitamine D sur la croissance osseuse, action très différente du rôle qu'ils sont appelés à jouer sur la carie dentaire. D'ailleurs, à mesure que la science de la nutrition se précise, on sait aujourd'hui qu'au terme de sa première dentition, l'enfant a, depuis longtemps déjà passé l'âge d'alimentation lactée prépondérante. On sait aussi, ou tout au moins, commence-t-on à mieux savoir que la valeur nutritive du lait écrémé est supérieure dans bien des cas à celle du lait complet. En effet, dans ce dernier, la quantité de crème absorbée nuirait à l'utilisation intégrale de la protéine et du calcium que le lait contient, même après écrémage. Ensuite n'y a-t-il pas trop d'autres facteurs qui favorisent l'accroissement de la carie pendant la grossesse, la lactation et la croissance, pour s'attarder seulement à la carence en lait, en calcium et en vitamine D.

METHODES DE PREVENTION

Ces méthodes sont avant tout un problème d'hygiène publique. C'est sous cet aspect qu'il convient de les discuter ici, puisque l'hygiène publique intéresse simultanément et au même degré, les dentistes, les médecins, les pédiatres et les hygiénistes. En ce domaine, les techniques particulières à chaque spécialité doivent momentanément être oubliées au profit de l'étude des mesures à prendre en commun.

L'hygiène publique n'est pas le fait d'une profession ou d'une spécialité, elle est la somme des efforts de tous ceux qui directement ou indirectement participent à l'orientation de la santé.

Ce domaine est presque illimité puisqu'à lui seul il est susceptible d'englober un nombre considérable de professions dont

les intérêts immédiats sont nettement divergeants et de participer à toutes les activités humaines. En outre du groupe médico-dentaire et des professions auxiliaires, il se sert des législateurs, des administrateurs, des statisticiens, des chercheurs, des éducateurs, des diététistes et des publicistes. Toute mesure destinée à prévenir sur une grande échelle la carie dentaire doit donc devenir une mesure d'hygiène publique. Son expansion et son efficacité en dépendent.

Au tout premier rang des fonctions assignées à l'hygiène publique se place celle de l'éducation du public. Elle n'a pas conquis cette première place par fantaisie, mais elle l'a méritée en démontrant qu'elle était indispensable à toutes les autres réalisations. Seule une opinion publique bien informée et surtout convaincue est capable de faire progresser l'hygiène. Cette opinion publique n'exigera les services dont elle a besoin que dans la mesure où on lui aura vendu leur nécessité. En langage commercial on peut dire qu'il faut la rendre acheteuse si l'on veut qu'elle consente à se procurer ce que l'hygiène a à lui vendre à si bon compte. C'est là que se trouve la pierre d'achoppement de toute initiative en hygiène publique.

Les prétextes pour lesquels la population en général se soucie fort peu de la santé des dents sont innombrables, et peuvent être d'ordre différent, mais il est une raison qui prime tout, c'est le manque de conviction. La responsabilité d'un tel état de choses doit être partagée entre le public, les dentistes, les pédiâtres et les hygiénistes et ce n'est que lorsqu'on en aura pris pleinement conscience que l'efficacité d'une action concertée pourra être envisagée.

L'étude détaillée d'un problème de cette envergure nous entrainerait tellement loin de l'objectif proposé qu'il est préférable de limiter la discussion aux seuls points qui intéressent à la fois le dentiste et le pédiâtre.

La dentition chez l'enfant est un des épisodes au cours de la croissance et du développement au sujet duquel le pédiâtre est constamment consulté. Une des

premières questions qu'on lui pose a trait aux phénomènes locaux, régionaux ou généraux qui accompagnent l'éruption dentaire. Les signes locaux sont trop rarement sérieux et quant aux signes régionaux ils se bornent le plus souvent à une conjonctivite ou à une rhinite non infectieuse secondaire à une section réflexe du trijumeau. Comme ces réactions sont loin d'être universelles, elles ne sauraient relever de l'hygiène publique.

On ne peut en dire autant des signes généraux, puisqu'il y a grand danger à laisser se répandre le préjugé que la dentition en est responsable. Un bon examen de l'enfant nous révèle toujours un épisode évoluant ailleurs qu'il serait dangereux de ne pas rechercher sous prétexte qu'il coïncide avec l'éruption dentaire. Cette notion doit être la plus répandue possible afin de parer à un danger plus menaçant que celui de l'éruption dentaire elle-même.

La seconde question au sujet de la dentition n'est pas assez fréquemment posée au pédiâtre, ou bien si elle l'est, il ne semble pas en tenir un compte suffisant. Elle se rapporte aux anomalies dans l'ordre d'apparition des dents, dues dans bien des cas à la présence de dents surnuméraires, troublant l'ordre de l'éruption. C'est une autre notion à diffuser davantage en milieu médical, afin que par une intervention opportune et appropriée, soit allégé le fardeau de l'orthodontie. Plus souvent peut-être le médecin devrait-il demander une radiographie.

D'autres questions de nature à rendre perplexes le dentiste et le pédiâtre, sont celles qui se posent au sujet de l'alimentation. Nous savons tous, que les dents commencent à se former dès le 4^{ème} mois de la grossesse et que leur formation embryologique relève de l'ectoderme et du mésoderme. L'invagination du premier donne naissance à des cellules épithéliales, la plupart calcifiées. Le mésoderme donne naissance au tissu conjonctif générateur lui-même du tissu osseux. De cette notion va découler une double indication en regard de la nutrition.

La première, c'est qu'il faut à tout prix

prescrire à la femme enceinte un régime alimentaire capable d'assurer la kératinisation des cellules épithéliales par l'utilisation de la carotène ou de la vitamine A. Quant au tissu conjonctif générateur de tissu collagène, il a besoin d'être protégé par un apport suffisant en Vitamine C. Ces deux tissus comptent sur la vitamine D ou sur une transformation intégrale de la pro-vitamine D en vitamine D pour parvenir à leur calcification. Mais ce qu'il faut surtout retenir à ce propos, c'est que l'intervention diététique ne saurait se limiter à un apport suffisant en vitamines. Il faudra en outre éliminer toute cause susceptible de nuire au fonctionnement du métabolisme normal, et dépister tous les états constitutionnels endocriniens ou autres qui pourraient intervenir dans le même sens.

La seconde indication est de beaucoup la plus importante puisqu'elle a trait à la discussion des voies et moyens à prendre pour atteindre un public toujours plus grand. Il faut se souvenir aussi que le point de vue dentaire se trouvera toujours implicitement inclus dans tous les programmes ou réalisations de l'hygiène alimentaire en général, mais peut-être pas suffisamment explicite. Le travail accompli au nom de la santé future de l'enfant, ne peut faire autrement que d'avoir une portée immédiate sur la santé dentaire de la mère et de son enfant. Aucun service d'hygiène maternelle et infantile ne saurait être complet à moins qu'il ne compte dans ses rangs un dentiste et une hygiéniste dentaire. Même si toute la besogne à accomplir est trop lourde pour une équipe restreinte, cette équipe pourra quand même satisfaire aux exigences les plus urgentes.

Que dire maintenant des obstacles qui se dressent en hygiène publique lorsqu'il s'agit d'éducation du public.

En matière de nutrition et de régime, le premier à vaincre et, non un des moindres, c'est la tradition. Tradition qui suit les familles de mère en fille, et qui impose un menu contre lequel il n'est pas facile d'intervenir même par nécessité. Le menu ainsi conçu est devenu partie intégrante du milieu familial au point qu'il

résiste à toute modification. Les arguments apportés en faveur d'un changement ne sont jamais assez puissants pour entraîner une conviction.

Dans d'autres cas, la résistance s'appuie sur des considérations d'ordre économique qu'il n'est pas toujours facile de circonvenir. C'est ainsi, par exemple, que l'on voit plusieurs personnes se plaindre que le lait se vend très cher, pendant qu'un montant plus élevé est consacré à l'achat de friandises ou de "liqueurs douces".

Très souvent aussi l'obstination reconnaît une origine psychique. Pour certaines personnes, renoncer à tel aliment veut presque dire, qu'ils perdent toute leur sécurité. Celle-ci dépend tellement de ce qu'ils mangent qu'ils confondent volontiers les deux. D'ailleurs les excès qu'ils commettent sont très souvent imputables à cette notion de sécurité qu'ils éprouvent en les consommant, plus encore qu'à la saveur de l'aliment en cause.

Quoi qu'il en soit, en hygiène dentaire, en hygiène alimentaire, tout comme en n'importe quel autre secteur de l'hygiène, pour réussir, il faut trouver à tout prix, l'argument qui entraîne. C'est la plus grande difficulté toujours présente à n'importe quel niveau de l'éducation.

Le pédiatre tout comme le dentiste s'intéresse lui aussi à l'hygiène scolaire. A ce sujet ne serait-il pas à propos de reviser certaines positions prises? L'examen de la bouche, le repérage et le traitement des caries existantes ne sont qu'un aspect du problème à opposer à l'importance de l'enseignement de l'hygiène dentaire, et cela à partir des toutes premières années d'écolage.

Le pédiatre partage encore l'intérêt du dentiste lorsqu'il est question d'orthodontie, ou de l'étude de toutes les malformations du massif bucco-facial susceptibles d'entraîner une position vicieuse de la denture. La diminution de l'allaitement maternel compte pour beaucoup, plus peut-être à cause des troubles de la nutrition qu'il est susceptible d'entraîner, que par les actions dynamiques en cause.

Toujours en regard de l'orthodontie le pédiatre, mieux que quiconque, con-

naît l'influence de l'habitude du suçage du pouce. Que jusqu'à 2 ans—2½ ans elle soit sans importance, sa signification n'est plus la même lorsqu'elle se prolonge au-delà de la 4ème année. Même si elle dénote à son origine une insécurité émotive et qu'elle indique la nécessité des facteurs de mésadaptation, elle n'est pas sans entraîner des déformations de la cavité buccale.

Le pédiatre sait aussi que certaines maladies peuvent entraîner un arrêt de développement des os, et que si cet arrêt de développement se produit au niveau des maxillaires, il en résultera une déformation justifiable de correction orthodontique.

Comme on vient de le voir, les points d'intérêt communs aux deux professions sont très nombreux même si l'énumération en a été incomplète. Tout le problème de la collaboration médico-dentaire reste subordonné au nombre des tâches à accomplir et à leur ampleur.

En tout premier lieu, il est soumis au nombre et à la distribution relative des dentistes par rapport à la population de notre Province. Il est inutile de trop entreprendre lorsque les chiffres officiels fournis en 1948 donnent pour la province de Québec 1102 dentistes pour desservir une population de 3,810,000 habitants. Pour n'avoir pas tenu compte de telles données de base, plus d'une initiative en hygiène a dû être abandonnée et le même raisonnement s'applique lorsque certains services cherchent à s'étendre en horizontale plutôt qu'en verticale. Il vaut mieux conserver un coefficient d'efficacité à un niveau élevé que de vouloir satisfaire à toutes les exigences. Toute expansion horizontale disproportionnée ne tarde pas à rencontrer une insuffisance budgétaire qui lui interdit la continuité de l'oeuvre.

Avant que la coopération médico-dentaire puisse porter des fruits, il lui faudra entreprendre l'éducation des membres des professions en cause. A titre d'exemple, il serait peut être opportun de mentionner ici l'expérience qui a été conduite au Tennessee. Pour mieux connaître les réactions des clients appelés à

se rendre chez le dentiste et aussi dans le but de familiariser les dentistes avec les réactions des clients pusillanimes on organisa une espèce de laboratoire de recherches. A tour de rôle et devant leurs confrères, deux dentistes étaient appelés, l'un à jouer le rôle du client timoré ou rébarbatif, et l'autre celui du dentiste consulté. Après que la scène de la réception eût été jouée par tous les membres participants, l'assemblée était appelée à critiquer l'attitude du dentiste et à proposer les corrections qui s'imposaient. Entre autres choses, cette expérience a mise en relief que l'hésitation des clients à se rendre chez le dentiste posait un problème d'hygiène publique d'importance. C'est une tâche de plus qu'il faudra accomplir non seulement auprès des enfants, mais même auprès des adultes.

Quelles que soient la multiplicité et l'ampleur des programmes, si grands que puissent paraître les obstacles, la profession médicale et la profession dentaire ne failliront pas. Depuis quelques années, il y a des signes évidents d'une collaboration plus intense et de plus en plus la médecine reconnaît que l'art dentaire est presque devenu une autre de ses spécialités.

En terminant qu'il soit permis d'exprimer un double voeu, celui d'un nombre toujours croissant de dentistes qui s'intéressent ou se consacrent à l'hygiène publique et celui d'une fondation, aux Facultés de Médecine, d'une chaire de pédodontie.

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Nouvelles des Sociétés

Société de Stomatologie de Québec

La Société de Stomatologie de Québec, en collaboration avec le Jeune-Commerce de Québec, a tenu une semaine d'hygiène dentaire du 13 au 18 avril dernier.

Cette "semaine," faite de causeries à la radio, d'expositions d'hygiène dentaire dans les principales montres des magasins de la ville, de conférences et de projections cinématographiques devant les écoliers, de l'examen gigantesque des dents de 3,300 élèves des écoles, de communiqués d'intérêt dentaire dans les journaux, de discours prononcés aux différents clubs de Québec, s'est clôturée par une journée d'étude, où des maîtres de la science odontologique se sont adressés aux dentistes de Québec et des environs.

L'accent de toutes ces manifestations s'est porté vers la jeunesse; on a parlé à l'intelligence et aux sens des enfants pour leur montrer les bienfaits d'une denture saine et complète; on a indiqué aux parents les moyens de doter leurs enfants d'une cavité buccale en santé.

Cette mise en scène de l'importance de l'hygiène dentaire, réalisée durant toute une semaine a créé une profonde impression dans le public et le fait que les dentistes aient bénévolement examiné les enfants a produit une atmosphère très favorable à notre profession.

L'examen gratuit de 3,300 enfants, en plus de faire jouer à ceux-ci un rôle actif dans ces manifestations, fournira des renseignements statistiques précieux sur l'état moyen des dents de ces écoliers et de ces écolières.

La Société de Stomatologie, en organisant cette campagne intense d'hygiène dentaire, a fait preuve d'une initiative louable et d'une esprit d'organisation peu ordinaire.

La lecture du programme de la semaine est une révélation; tout a été pensé, organisé, coordonné pour que chaque citoyen apprenne quelque chose en hygiène dentaire.

Il faut féliciter les organisateurs de ce mouvement, et ils sont nombreux. Il

faudrait mettre des noms, tous les noms, mais la liste serait trop longue!

Qu'il suffise de dire: "Bravo, Québec. Vous donnez l'exemple."

Société Dentaire de Montréal

Séance du mois de mars 1953

Le président, le docteur Charette, rappelle que l'Université organise des cours post-scolaires du soir, et demande au doyen le docteur Charron de donner des détails à ce sujet. Ce dernier offre de mettre à la disposition de tous le personnel enseignant de la Faculté pour le bien général de la profession. Monsieur Fiset, étudiant de la Faculté Dentaire, invite les membres de notre société à prendre part au gala des étudiants. Le président nous donne une ébauche du programme du prochain Congrès et demande la collaboration de tous pour en faire un succès. Il présente ensuite les conférenciers invités, participant au forum d'intérêt général. Le docteur Tremblay agit comme modérateur de cette réunion.

Le docteur Paul Geoffrion présente trois cas d'anomalies dentaires créés par des habitudes. Il analyse les moyens de corriger l'enfant de sucer son pouce. La persuasion semble la plus recommandée par le conférencier. Avec une approche psychologique et par une série de moyens que décrit le conférencier, on arrive à corriger l'enfant de son habitude. Et chaque fois qu'on peut gagner la confiance du jeune patient, on est sûr de la réussite.

Le docteur Gabriel Lord présente ensuite un cas d'attaches variées dans la confection d'un "splint" à la suite d'une alvéolyse. Il nous présente des modèles pour illustrer sa démonstration.

Le docteur Marcel Archambault parle de deux cas: le premier consiste en un traitement pour l'ablation d'un instrument brisé dans un canal radiculaire. Le second cas donne la technique à suivre dans un cas de réimplantation de deux centrales chez un jeune patient.

Le docteur Hervé Deschênes illustre

deux causes de l'attrition: l'attrition mécanique et physiologique. Il nous parle d'un cas d'abrasion mécanique ayant une cause autre que la mastication. Comme traitement: dans un cas, il construit une obturation combinée d'or et d'acrylique. Dans l'autre cas: un ciment amalgame avec acrylique. Le docteur Jean Fontaine présente un cas de condensation osseuse au niveau des centrales inférieures. Il illustre en détail la manière de faire son diagnostic différentiel, et en vient à la conclusion que nous sommes en présence d'un ostéome fibreux périapical, et qu'il n'y a aucun traitement à instituer.

Le docteur Claude Madore insiste sur l'importance du coup de bistouri pour la

guérison consécutive de la plaie et pour éviter les douleurs post-opératoires. Le principe à suivre est d'ouvrir la longueur d'une dent et demie en avant de la dent à extraire.

Le docteur Georges Pelletier présente un cas d'hémorragie gingivale à la suite d'une avitaminose. Il analyse en détail la fragilité du tissu gingival. A la suite d'une vitamino-thérapie, on voit tous les symptômes disparaître au niveau des papilles de la gencive.

Le docteur Tremblay remercia les conférenciers en disant que tous les membres présents appréciaient beaucoup le travail qu'ils s'étaient imposés en venant participer à ce forum.

Semaine dentaire à Québec



Première rangée, de g. à d.: Dr Goeffrion, Paul, vice-doyen de la faculté de chirurgie dentaire, Université de Montréal; Dr Ellis, Roy E., doyen de la faculté dentaire, Université de Toronto; M. Cloutier, Robert, président du Jeune-Commerce; Dr Abraham, J. W., président du Collège des Chirurgiens-Dentistes de la province de Québec; Dr Ratté, Gustave, président de l'Association Dentaire Canadienne; M. Légaré, H. H., échevin, représentant du maire de la ville de Québec; Dr Cohen, Tuft Dental College; Dr Reny, Antonio, directeur de la division dentaire du Service de Santé de Québec.

Deuxième rangée, de g. à d.: Dr Dufour, Jacques, secrétaire de la Société de Stomatologie de Québec; Dr Paquette, Berchmans, directeur du Service de Santé de Québec; Dr Grenon, J. G. A., président de la Société de Stomatologie de Québec; Dr Giguère, Yves; Dr Bernier, Louis; Dr Hamel, Jules; Dr Langlois, Rémi; Dr Langlois, Marcel; Dr Plamondon, Viger; M. Langelin, Roger, Jeune Commerce; Dr Huot, René; Dr Corcoran, P.H.

Nouvelles de l'Association

La ville de Québec se nomme un directeur de service dentaire

Le Conseil de Ville de Québec a nommé le Dr Antonio Reny, diplômé en hygiène dentaire publique, directeur du Service dentaire de la Cité avec juridiction sur toute la question d'hygiène dentaire et le personnel de ce département. La nomination a pris force le 1er mai. Le Dr Reny aura pour mission de préparer un plan d'ensemble en hygiène dentaire. Les enfants indigents seront traités à la clinique municipale et les adultes dans les hôpitaux.

Cette nomination est le résultat de longues démarches des gouverneurs du Collège des Chirurgiens-Dentistes pour le district de Québec.

Fête en l'honneur du docteur J. Arthur Renaud

Le Dr J. Arthur Renaud, professeur titulaire en préclinique de dentisterie opératoire à la Faculté de chirurgie dentaire de l'Université de Montréal, prendra sa retraite bientôt, après vingt-huit années de professorat à l'Université.

A cette occasion, ses collègues et leurs épouses se sont réunis mardi, le 23 avril, à la Cafeteria des professeurs de l'Université pour témoigner au Dr Renaud une marque d'estime et de reconnaissance.

Le Dr Victorien Dubé, président de l'Association générale des diplômés de l'U. de M., se fit l'interprète des anciens élèves du Dr Renaud pour lui dire combien ils appréciaient son dévouement et ses sacrifices à la cause de l'enseignement.

Le Dr Conrad Archambault, conseiller municipal à la Cité de Montréal souligna l'estime de la profession dentaire pour le Dr Renaud.

Le Dr Ernest Charron, doyen de la faculté, se fit le porte-parole de ses collègues pour dire au Dr Renaud le regret et le vide que son départ allait créer au sein du corps professoral. Le Dr Charron, en outre, annonça que le Conseil de la faculté avait décidé de nommer le Dr Renaud professeur émérite. On présenta

un cadeau au héros de la fête et à son épouse, une gerbe de fleurs.

Le Dr Renaud remercia en termes émus l'assistance particulièrement nombreuse et tint à mentionner que cette manifestation d'estime resterait à jamais dans son souvenir.

Durant le dîner, les étudiants apportèrent leur contribution sous forme de sketches spirituels.

Déclarations intéressantes

Le Dr J. P. Walsh, doyen, écrit dans le New Zealand Dental Journal qu'il en coûte aussi cher au gouvernement de son pays pour former des assistantes dentaires destinées au service scolaire que pour éduquer un dentiste. Il spécifie qu'une assistante prodigue au public des services partiels pour une moyenne de huit ans, tandis que le dentiste donne des services complets pour une durée moyenne de quarante ans.

Le Bureau des Recherches économiques et des Statistiques de l'Association Dentaire Américaine, après enquête où 4000 dentistes ont fourni des rapports sur 39,679 patients, établit que la carie dentaire constitue la cause principale de la perte des dents jusqu'à 39 ans pour les femmes et jusqu'à 34 ans pour les hommes. Après cette période de vie, les maladies gingivales sont surtout responsables de la disparition des dents.

On rapporte que jusqu'en février 1953, plus de 600 municipalités des Etats-Unis avaient adopté la fluoruration de leurs eaux de consommation.

L'Organisation Mondiale de la Santé nomme un consultant dentaire

La Fédération Dentaire Internationale avait recommandé la nomination d'un dentiste au sein des dirigeants de l'Organisation Mondiale de la Santé pour y consacrer tout son temps. On doit donner suite à cette suggestion à la 6e réunion de cet organisme à Genève, en mai 1953.

Selon Gerald H. Leatherman, d'Angleterre, secrétaire général de la F.D.I., la

Fédération croit que les services d'un dentiste seraient de nature à favoriser la réalisation des buts de l'Organisation Mondiale de la Santé et ceux de la Fédération Dentaire Internationale. Depuis 1948, des réunions de l'O.M.S. ont approuvé plusieurs propositions ayant trait à la diffusion de l'hygiène dentaire, qui avaient été mises de l'avant par la F.D.I.

En 1950, l'O.M.S. avait nommé le Dr Philip Blackerby, de Battle Creek, Michigan, comme conseiller pour une durée de trois mois. Deux ans plus tard, le dentiste actuellement en fonction, le professeur G. Toverud, d'Oslo, Norvège, avait été appointé pour cinq mois et son terme d'office a pris fin le 30 avril.

La F.D.I. est d'avis, selon M. Leatherman, que de simples conseillers dentaires ne sont pas en mesure d'élaborer un programme d'envergure pour l'hygiène dentaire, quand on retient leurs services que pour de courtes périodes. La Fédération demande de prolonger le terme d'office du professeur Toverud et que le budget pour 1954 prévoit une somme pour le salaire d'un dentiste à temps complet.

La F.D.I. recommande qu'une commission internationale entreprenne l'étude des sujets suivants pour favoriser la dentisterie préventive: 1) la nutrition et la diététique; 2) la fluoruration des eaux de consommation; 3) l'application topique des fluorures; 4) les principes reconnus en hygiène dentaire et en traitements conservateurs.

Fédération Dentaire Internationale— abonnement de soutien

Le Comité Exécutif de l'A.D.C. a récemment nommé son secrétaire comme trésorier national de la Fédération Dentaire Internationale. Cette Fédération constitue l'organisme officiel mondial de la profession dentaire et ses moyens de subsistance lui viennent de sources bénévoles. L'Association Dentaire Canadienne fait partie de cette organisation, comme d'ailleurs presque toutes les associations nationales de tous les pays; chacune de ces associations paie une cotisation an-

nuelle basée sur le nombre de ses membres.

Les membres d'une association nationale peuvent se constituer individuellement membres de soutien de la F.D.I. La cotisation, ici au Canada, pour devenir membre, est de \$9.00 par année et elle comprend l'abonnement au journal trimestriel de la Fédération. Depuis longtemps, plusieurs dentistes canadiens se sont faits membres de la Fédération, mais il serait bon que le nombre de ces membres augmente pour fournir un support appréciable à cette organisation. On trouvera plus bas de plus amples renseignements. Il faut souhaiter que les anciens et les nouveaux membres remplissent une formule et la fasse parvenir au secrétariat de l'A.D.C., en joignant leur chèque, fait payable au pair, à Toronto, au nom de Don W. Gullett, trésorier national.

Renseignements au sujet de la F.D.I.

La Fédération Dentaire fut fondée à Paris en 1900 et, excepté durant les années de guerre, elle organisa des réunions à des époques régulières. C'est l'organisation mondiale de santé la plus ancienne au sein des professions médicales. Au Congrès de Londres, l'an dernier, plus de 70 pays s'étaient fait représenter.

Quel est le but premier de la Fédération?

Le but original de la Fédération était d'organiser des congrès dentaires internationaux à des époques déterminées. Après plus de cinquante années, la raison d'être de la Fédération s'est généralisée pour réaliser le principe suivant: "Tenter de donner à tous les peuples le niveau le plus élevé possible de santé dentaire pour en faire bénéficier leur corps en général".

Quel est le programme de la Fédération?

En s'efforçant d'améliorer la santé dentaire des populations et de promouvoir le progrès de la profession dentaire dans le monde, la Fédération remplit les tâches suivantes: 1) organiser un Congrès international tous les cinq ans; 2) favoriser l'existence d'associations na-

tionales puissantes dans tous les pays; 3) encourager des rapports étroits et l'échange de renseignements entre les sociétés dentaires nationales; 4) publier le *Journal Dentaire International*; 5) approfondir et faire connaître les problèmes dentaires d'intérêt international; 6) collaborer avec les autres organismes internationaux s'occupant de santé et de questions scientifiques; 7) reconnaître par des prix et des mentions les réalisations dans le progrès de la dentisterie; 8) aider à la fondation de centres de documentation pour y amasser la littérature dentaire.

Quelles sont les ressources pécuniaires de la Fédération?

La Fédération vit seulement de souscriptions libres de sociétés dentaires et d'individus, qui ont à coeur le maintien de relations internationales solides. En fait, la Fédération reçoit (a) des cotisations annuelles des associations dentaires nationales, qui en font partie; (b) des cotisations libres de dentistes, qui, individuellement, s'enregistrent comme "membres de soutien"; (c) les surplus provenant des Congrès internationaux. Les officiers et les membres de la Fédération, qui s'occupent de la réalisation de son programme, y prodiguent gratuitement leur temps et leurs efforts, à part une ou deux exceptions.

Il reste encore un travail immense à faire dans le domaine international de la profession dentaire. D'autre part, la Fédération est assiégée tous les jours de demandes d'aide de conseil sur plusieurs questions. Pour cette besogne, les disponibilités pécuniaires de la Fédération ne suffisent pas. C'est pourquoi elle fait appel aux dentistes désireux d'aider financièrement à la réalisation d'un programme dentaire international de s'inscrire comme "membre de soutien".

Quels avantages procure l'inscription à la Fédération?

Les associations nationales ne peuvent collaborer au progrès international de la

dentisterie que par le truchement de la Fédération. Plusieurs organisations internationales dans des domaines autres que celui de la dentisterie, ne peuvent, d'après leur constitution, avoir des rapports qu'avec des groupements similaires aux leurs. C'est ainsi que la Fédération constitue le seul organisme dentaire susceptible d'établir des échanges avec d'autres groupements internationaux.

Un membre de soutien de la Fédération peut coopérer aux activités internationales, non seulement en ce qui concerne sa profession, mais aussi sur un plan beaucoup plus vaste, pour améliorer la compréhension et la bonne volonté entre les différentes nations.

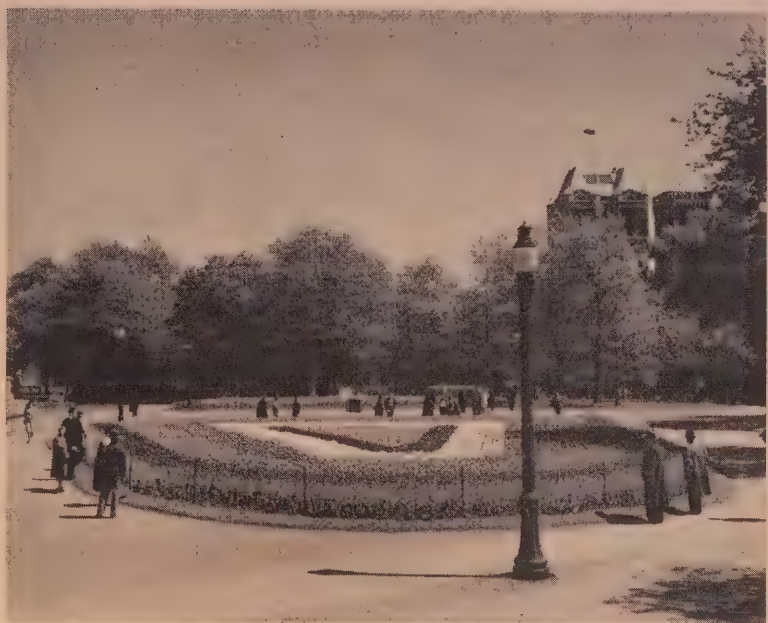
Le membre de soutien recevra tous les ans une carte et un parchemin attestant qu'il est membre de la Fédération; occasionnellement, un bulletin de nouvelles traitant des diverses activités de la Fédération lui sera adressé; il pourra assister à ses réunions annuelles et bénéficier d'une réduction du coût de l'inscription aux congrès quinquennaux de la Fédération; de plus, le membre de soutien est abonné au *Journal Dentaire International*.

Qui veille aux destinées de la Fédération?

La Fédération est dirigée par l'Assemblée Générale qui est composée des délégués des associations nationales. Cette Assemblée générale élit un conseil qui veille aux destinées de la Fédération entre les assemblées annuelles.

Où est situé le secrétariat général de la Fédération?

La Fédération a été incorporée en Belgique, mais ses quartiers-généraux permanents sont actuellement à Londres. Le secrétaire-général est l'officier responsable de la Fédération et il a son bureau à 35, Devonshire Place, Londres, W.I., Angleterre.



Carré Dominion, au printemps

**Congrès de l'Association Dentaire Canadienne
et du Montreal Dental Club
à Montréal, les 18, 19, 20, 21 octobre**

Enregistrement:

On peut s'inscrire d'avance pour le Congrès et réserver des chambres d'hôtel en écrivant au Dr D. B. Ward, 1414 rue Drummond, Montréal. Frais d'inscription: \$15.00.

**Exposition d'oeuvres d'art
de l'Association Dentaire Canadienne**

A l'occasion du Congrès National de l'Association Dentaire Canadienne, qui aura lieu à Montréal, les 18, 19, 20 et 21 octobre prochain, les dentistes du Canada, les membres de leur famille ou les employés de leurs cabinets sont invités à exposer leurs oeuvres d'art.

Ces travaux artistiques peuvent être des peintures, des dessins, des photographies, des sculptures, etc., élaborés comme passe-temps.

Cette exposition se tiendra un salon de l'Hôtel Mont-Royal durant le Congrès et pour tout renseignement, on s'adresse au Dr A. R. Winn, ou au Dr Louis Lépine, 1538 ouest Sherbrooke, Montréal.

Programme préliminaire

Conférenciers

BAXTER, H.A., Montréal	"Programme de réhabilitation totale pour les patients souffrant de fissure palatine ou de bec-de-lièvre"
FISK, G. V., Toronto	Conférence du Memorial du Dr George W. Grieve
SELYE, H., Montréal	"Pathologie du trauma"
LEBLOND, C.-P., Montréal	
WAINWRIGHT, W. W., Chicago	"Utilisation de l'énergie nucléaire en dentisterie"
TABERN, D. L., Chicago	
TROUT, E. D. Milwaukee	

Cliniciens

ANDERSON, P. G., Toronto	"Dentisterie opératoire"
CLINE, H. M., Vancouver	"Aurifications"
CORPS DENTAIRE ROYAL CANADIEN, Ottawa	"Quelques phases de l'endodontie"
CORPS DENTAIRE ROYAL CANADIEN, Ottawa	"Prothèse dentaire"
CRIPPS, S., Montréal	"Equilibre de l'occlusion normale"
DOBSON, D. P., Bethesda	"Endodontie"
GENDRON, ROLAND, Université de Montréal	"Traitement des troubles de l'articulation temporo-mandibulaire en présence d'occlusion traumatique"
GITNICK, P. G., et WALFORD, W. F., Université McGill	"Périodontie pratique"
GODFREY, R. J., Toronto	"Prothèse"
HEDMAN, W. J., Bethesda	"Endodontie"
McINTYRE, R. R., Calgary	"Orthodontie"
McLEAN, H. R., Edmonton	"Dentisterie opératoire"
MILLER, J. B., New-York	"Couronnes et ponts"
RAYMOND, ANTOINE, Université de Montréal	"Anatomie et pathologie de l'articulation temporo-mandibulaire — Intervention chirurgicale pour une ankylose osseuse."
STEFFEL, V. L., Columbus	"Prothèse partielle"
TANNER, D. M., Toronto	"Chirurgie buccale"

Cliniques de table

Les dentistes qui désirent participer à cette partie du programme sont priés de communiquer avec le Dr A. F. Cameron, 1414 rue Drummond, Montréal.





PLACE D'ARMES, Montreal, with one of the twin steeples of Notre Dame Cathedral in the background. In the foreground, a "coureur des bois," one of several bronze figures adjoining the statue to Maisonneuve, founder of Montreal (1642).

JOINT MEETING

THE CANADIAN DENTAL ASSOCIATION THE ANNUAL MONTREAL FALL CLINIC

Under the Auspices of

THE COLLEGE OF DENTAL SURGEONS, P.Q.

OCTOBER 18, 19, 20, 21, 1953

PLAN NOW TO ATTEND

Cheques or money order for registration fee of \$15.00 should be made payable to The Montreal Dental Club and mailed to Dr. D. B. Ward, Joint Convention Committee Secretary, Suite 309, 1414 Drummond Street, Montreal, Que.



Photo by James B. Hardy

WESLEY J. DUNN, D.D.S.,
Toronto, Ontario

Asst. Editor—Journal, Ontario Dental Association,
1948-1950

Editor—Oral Health, 1950-1953

Editor-in-Chief—Journal, Canadian Dental
Association, 1953-

*Inserted on direction of Committee on Publications.



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No. 7

Practical Considerations in the Placement of Amalgam Restorations*

by WALDEMAR A. LINK, A.B., D.D.S., F.A.C.D., Chicago, Illinois.

IN THESE paragraphs you will probably read a lot of old things about amalgams, in fact, if you read long enough you will find some things which are quite repetitious, some things which are fairly new and perhaps one or two things which you have not heard before about amalgam. It is in no sense a report on a research problem. Plagiarism has been defined as copying from one man, research from more than one. So the things which I want to tell you about are, for the most part plagiaristic research, if you please. Neither am I an expert, although an expert has been defined as a man from out of town.

It has been very gratifying to see that amalgam has, in the past years found renewed interest among the profession. Of course like Sir Lancelot in the search of the Holy Grail, dentists still are looking for the panacea to all operative problems, they thought they had found a good material some years ago when the extra-orally cured acrylic fillings were introduced. These were dropped like the proverbial hot potato. We also have been bombarded by self-curing acrylics. These are now in the process of being dropped, rather ignominiously. At the present time there

is a great deal of controversy over them. Silicate of course with its limitations and its idiosyncrasies, still is reluctantly used.

In one of Shakespeare's tragedies, we find these lines: "Me thinkest, thou protesteth too much." I believe these lines express the sentiments of many dentists toward amalgam. This material whose history dates back over a century still does not have the support of dentists which it should have. The failures which occur are blamed upon the material itself, when in reality amalgam never was at fault. It has been the manner in which cavities have been prepared for the reception of amalgam and the manner in which amalgam has been manipulated that failure has occurred and by far the least considered—patient failure. So I can assure you that amalgam is here to stay. You're stuck with it whether you like it or not. And we need only ask ourselves "What would we do without amalgam in our daily practice?"

Many tables and graphs have been used to make comparisons of various filling materials. The first is that of the late Arthur D. Black, former dean of the Northwestern University Dental School.

*Presented before the Academy of Dentistry, Toronto, February 18, 1953.

**Doctor Arthur Black's Comparative Tabulation of the
Desirable Qualities of Several Filling Materials**

Qualities most desired	Gold Foil	Amalgam	Gold Inlay	Porcelain Inlay	Silicious Cement
1. Indestructibility in the fluids of the mouth	a	a	a	a	d
2. Adaptability to cavity walls . .	a	b	c	c	d
3. Freedom from shrinkage and expansion	a	a-z	a	a	d
4. Resistance to force of mastication	a	b	a	c	d
Qualities of secondary importance					
5. Colour, or appearance	c	d	c	a	a-z
6. Non-conductivity of thermal changes	c	c	b	a	a
7. Convenience of manipulation . .	c	b	a	d	a

Explanation:

a, highest quality; b, next; c, third; and d, the lowest quality.

There are certain definite requirements for the preparation of cavities for amalgam. The cavity which is to house the amalgam must be at least one mm. below the dentino-enamel junction. The walls of the cavity should be perpendicular, except the mesial and distal walls where the direction of the enamel rods requires a slope towards the pulpal floor. Undercuts may be used provided they are placed in the greatest bulk of the tooth, which would be under the cusps, away from the pulp and they must be an integral part of the cavity preparation. In all amalgam cavity preparations external bevels are contraindicated.

Amalgam is a filling material which expands. Expansion naturally is greatest in areas where there is the least resistance to this force. That would be occlusally, in other words the bevel of the restoration is raised and subsequent stress on this bevel will result in fracture. All too often amalgam is blamed for this fracture, in reality fracture was inevitable due to this faulty cavity preparation.

Fig. 2—Expansion of Amalgam.

Many amalgam restorations show dark, discoloured and defective margins. Some of the marginal failures can be contributed to the bevelling of the cavosurface angle. When amalgam expands the margin is raised, and un-

protected. The stresses of mastication then cause fracture. (Fig. 2)



The concept of a two-surface cavity for amalgam varies with different individuals, and so you will get different ideas and views of the cavity preparation for amalgam. I would, however, like to give you my ideas of a two-surface cavity for amalgam. This cavity preparation should again be one mm. below the dentino-enamel junction. It should be a box type cavity. Because of the inherent weakness of amalgam, bulk is required particularly over the marginal ridge area. Compared to the two-surface cavity for a gold inlay the isthmus should be wider. The axial pulpal line angle should be bevelled. The added bulk which is obtained by bevelling the axiopulpal line angle is illustrated in Figure 3.

The gingival wall should be flat and the enamel rods should not be bevelled

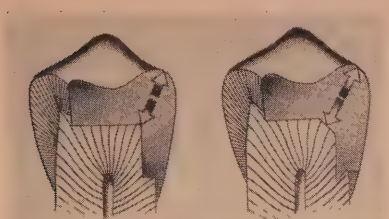


Fig. 3—Bulk obtained by bevelling Axiopulpal Wall.

as is the case in the inlay preparation. The boxing should terminate occlusally either at the axiopulpal line angle or before the cavosurface angle of the tooth is reached. If this boxing is permitted to extend to the external enamel line of the tooth a small triangle will result. It will be difficult to carve the amalgam at this point as well as subsequently polish it. The occlusal portion of the cavity should be wider buccolingually than a comparable cavity for the inlay and the proximal portion should be independent of the occlusal for retention, each should be retentive as separate units. A gingival channel or groove should also be placed in the dentine for added retention and for keeping flow at a minimum. It is important that this groove be placed at least one mm. beyond the D. E. J. (Fig. 4)

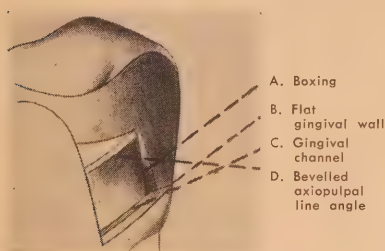


Fig. 4—Cavity Preparation.

Amalgam is definitely indicated in the M.O.D. type of cavity. Boxing is placed in both mesial and distal proximal areas.

When sufficient bulk is provided,

amalgam may be safely used when restoring cusps. Two preparations are here suggested. We know that the more margins to be cast in multisurfaced restorations, the greater is the possibility of error, i.e. deficient margins.



Fig. 5—Complex Cavities.

In complex cavities such as shown in Figure 5 amalgam serves efficiently, for with proper condensation all margins will at least be closed. At best, inlays depend upon a cementation for retention.

Another type of cavity preparation which is indicated for amalgam particularly in mesial portion of upper and lower first bicuspid because of aesthetics is the Bronner¹ type cavity here shown. This cavity as you can see is triangular in shape with the widest base of the triangle at the gingival. It is a cavity which conserves tooth structure when compared to a typical box-type cavity and is very retentive.



Fig. 6—Bronner Type Cavity Preparation.

This cavity no doubt will be questioned because of its limited extension buccally and lingually but it is indicated where caries incidence is low, oral hygiene is good and where aesthetics is highly important. The Hollenbeck cavity preparation for amalgam resembles the Bronner type cavity in this triangular respect.

THE GINGIVAL THIRD CAVITY

Amalgam has been widely used in teeth in which the buccolingual and buccogingival areas must be restored, due to caries and erosion of these surfaces.

In all cases amalgam must be placed in the cavity under dry conditions. Any contamination from saliva or from the hand will result in an expansion of the restoration and the margins will not be flush with the tooth surface, thus inviting a recurrence of caries. This bulging or creeping of the amalgam can be readily seen in many mouths.

In many respects the Class V cavity preparation is similar to that of the Class I cavity, only located differently on the tooth surface. The axial wall or the pulpal floor, as it is sometimes called in this cavity, follows the curvature of the dentino-enamel junction. The same depth in the dentine prevails, i.e., 1 mm. beyond this junction. Wherever possible, the mesial extension should not go beyond the mesiobuccal angle of the tooth. The same holds true for the distal extension, which should not extend beyond the distobuccal angle of the tooth. We know, of course, that this rule cannot be followed completely, for there are times when caries almost circumvents the tooth, particularly around clasps. The more the cavity is carried beyond this mesiobuccal or distobuccal angle of the tooth, the less retention will obtain, for the rod direction changes at these points and this makes for diminished retention. It is, of course, easy to lay down such a rule, but necessity determines the outline form in all cases.

Where the cavities are circumferential in nature, the restoration must be

placed in sections, that is, one portion must be set before continuing the replacement of another. The direction of the occlusal floor of the cavity will depend largely on the area in which the cavity is located. The same applies to floor inclination at the gingival area. Where little or no recession has taken place it is recommended that the gingival floor of the cavity be placed below the free margin of the gingivae, about $\frac{1}{2}$ mm. In those cases in which cementum is exposed and excessive recession has occurred, it would be folly to extend the cavity below the gingival margin.

The gingival retention form is cut straight to the pulpal floor in most cases for there is little stress on enamel rods in this type of restoration. Where enamel rods slant gingivally (at the cemento-enamel junction) it is permissible to slope the cavity preparation in the enamel but it must be cut at right angles to the axial wall in the dentine. For added retention, undercuts may be placed by using a large inverted cone or wheel bur. These undercuts must be placed in the occlusal and gingival dentine of the cavity only. Since there is little stress on this restoration (the only stresses which are applied to it are in brushing the teeth). Sharply cut cavity walls will retain the amalgam if it is well condensed and if the amalgam is placed under dry conditions. Davis recommends that the gingival outline should emerge from underneath the gingiva at a right angle to the free gingival margin.

Although the inlay I believe is the material of choice for deciduous teeth, because less depth is required for retention and pulp proximity is avoided. Nevertheless, we are called upon to place amalgam in the primary teeth. The slope of the enamel rods at the gingival area in the deciduous tooth is occlusally as differentiated from the adult tooth where the rods in the area generally are at right angles with the D.E.J., therefore nature gives us a natural retentive proximal area if we

but follow enamel rod direction and slope the gingival floor as indicated. (Fig. 7)



Fig. 7—Enamel Rod Direction.

ALLOY SELECTION

It is important that we select proper alloys for amalgam restorations. Many meet the requirements of the Bureau of Standards and yet there are some well-known brands on the market which in my opinion are deficient. A few years ago so-called high silver content alloys received a good bit of plugging, by that I mean, advertising as well as dental plugging into cavities. The increase in silver content was to result in amalgam restoration which would be better. Better than what? This increase in silver content was usually compensated for by a decrease in the tin content of the alloy. I can tell you this, the tin content of an alloy cannot be varied to compensate for flow without seriously affecting the dimensional changes. We are restricted to a definite tin content in balancing the alloy for an expansion of three to thirteen microns per centimeter to comply with A.D.A. specifications. High silver alloys do not necessarily have high flow. It is possible to manufacture a high silver content alloy with thick chips and free from ragged edges so that it will have low flow when tested, but it will have poor carving characteristics with subsequent bad tarnishing effects.

It is only when a series of amalgam alloys are made up with all manufac-

turing characteristics equal that it is possible to note the effect of varied silver content on flow. Tarnishing of amalgam restorations has always been one of our greatest problems and it is reasonable to assume that the higher the silver content the greater will be discolouration of amalgam. Some manufacturers have purposely graded alloy particles into three different sizes; small, intermediate, and large for purposes of gaining greater strength. This, however, does not add to the strength of the amalgam, in fact, this type of amalgam will have a lower crushing strength than an amalgam made up of closely graded particles of uniform size for it is a law of physics that in powder mechanics uniform size particles give us the greatest strength. If it were possible to arrange the various size particles to give added strength to the restoration, I would go along with such an hypothesis but it is practically impossible to do that.

Most machine tooled particles have an extreme variation in shape even when they have been graded. Also grading into long, medium and short length particles does not take into account the width and thickness; for example, try to pack match sticks which are a mixture of short and long lengths. It is practically impossible to secure a dense pack. Uniformly shaped particles slide over one and the other during condensation. They do not tend to bridge and web to give that crunching effect under the plugger as is the case with machine tooled chips. Therefore less force is required to condense such a uniformly graded alloy. According to Liebig²⁻⁵ the size and shape of the alloy particles govern, to a large extent, the amount of trituration necessary to obtain a smooth plastic mass. Finely cut, regular particles abrade more easily than particles of alloy which are irregular in shape, more or less jagged and curled, and which require some breaking down in order to obtain abrasion and amalgamation. The fine dust-like particles which result from this breaking down are probably

one of the factors causing variations in dimensional changes and flow properties of the amalgam.

Alloys which comply with A.D.A. specifications No. 1 all carry manufacturer's directions in regard to mercury-alloy ratio and time trituration. The usual ratio is 5 parts of alloy to 8 parts of mercury. The excess of mercury, of course, is required in order that a plastic mass will be obtained. The most important factor in all amalgam condensation is removal of excess mercury. We attempt to at least end up with a restoration which contains 50% each of alloy and mercury. It would be ideal if we could begin with the 50-50 ratio, but with such a percentage we would never acquire a sufficiently plastic mass to condense amalgam properly.

Some of the methods employed in the trituration of amalgam are as follows:

1. Hand method with mortar and pestle
2. Hand method with pressure control
3. Mechanical method

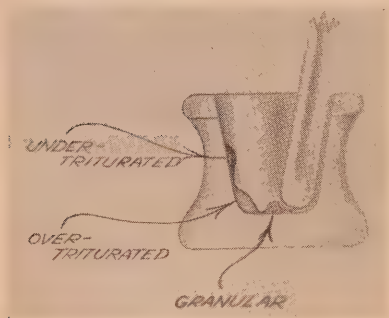


Fig. 8—Mortar and Pestle (after Kronfeld)

Inaccuracies may result from hand trituration. It will be noted that three types of amalgam will result when hand trituration is employed.

The mechanical method is nearer fool-proof. The timing device is set according to the number of spills re-

quired for a given restoration and the resultant mix will invariably be the same. When tritulating more than three spills each, an undue amount of heat is generated and this change in temperature may cause dimensional change in the amalgam. Testing by ear is better than by actual number of seconds. When alloy and mercury are placed in the capsule and the timing device is set, a muffled sound is heard, when this changes to a click sound, stop and remove contents from capsule. Replace the amalgam in capsule minus the pellet for a few seconds to let the material mull in the capsule. This serves the same purpose as removing the amalgam from the mortar and mulling in a piece of clear rubber dam. The purpose of this mechanical mulling is to coat the amalgam particles further with mercury and also to penetrate some alloy particles which may have escaped the action of mercury. It may be stated here that, in general, over-trituration will cause a shrinkage of amalgam; under-trituration will cause amalgam to expand excessively. Additional advantages of the mechanical method of trituration are:

1. In making large multi-surfaced restorations with amalgam, a fresh mix of amalgam can be obtained quickly and the amalgam will not begin to crystallize before it is introduced into the cavity.
2. The mix will be more uniform.
3. The human variable is eliminated.
4. The physical properties of amalgam are more likely to be constant.

The temperature³⁻⁴⁻¹² of trituration has a profound effect upon the subsequent setting reactions of dental amalgam. The lower the trituration temperature, the greater the ultimate expansion. Some alloys which contract when trituated at 95 degrees expand excessively when trituated at 55 degrees Fahrenheit. Manufacturers should include optimum temperatures for trituration in their directions.

Amalgam which has begun to crystallize on the bracket table should nev-

er be deplasticized by the addition of mercury to the mix.⁵⁻¹⁴ Such additions to the mass will reduce the crushing strength of the amalgam about 10 per cent of the original strength.

The more mercury used, the more mercury is retained,⁶ regardless of the packing method. Crushing strength decreases as the original mercury-alloy reaction is increased, both in one-hour period and the twenty-four hour period. Flow is increased as the mercury content is increased.

When the amalgam mix is continued longer than three minutes⁷ the following results have been observed which however cannot be detected clinically:

1. Amalgam contracts.
2. Higher flow.
3. Greater strength.

Three-minute mix:

1. Smoother.
2. Less tarnish.

THE TECHNIQUE OF CONDENSATION

Condensation may be compared to the application of pressure on a sponge filled with water. When pressure is applied to the sponge, the water will leave the sponge, when pressure is released the water immediately enters the sponge. The purpose of condensation, of course, is to bring the alloy particles into intimate contact with each other. We desire to get a bonding of alloy particles. When pressure is applied on amalgam the mercury leaves the amalgam and when pressure is released mercury returns into the body of the amalgam. It is important, therefore, that immediately after the application of pressure the excess mercury be removed. When using a rubber dam technique, which is definitely indicated in all amalgam work, this excess mercury can be blown away from the surface of the amalgam with compressed air, otherwise, wipe or scoop away the splashy mercury. The building of an amalgam restoration entails a knowledge of engineering principles. We are building a structure. I like to compare it to the building of a brick wall, i.e.,

laying one brick upon another and these bricks are held together with cement. It is bonding particle to particle. Mercury is used to tightly hold the alloy particles together in the case of an amalgam restoration.

Hardening of the amalgam proceeds at a much faster rate when condensation has been thoroughly done. If the coated particles of alloy are packed as closely as possible, the free mercury is more completely eliminated by displacement and the amalgam mass forms a hard crystalline structure quickly. Free mercury retards setting by weakening the crystalline network and affects the physical properties detrimentally, especially by decreasing the resistance to flow.

In order to obtain an amalgam which possesses the greatest crushing strength, with a minimum of expansion and a minimum of shrinkage, it must be well condensed. A perfectly contoured and polished amalgam which lacks good adaptation and crushing strength will be a failure. Condensation thus becomes a very important factor. The purposes of condensation are as follows:

1. To eliminate excess mercury.
2. To obtain good bonding between alloy particles.
3. To bring the alloy particles into intimate contact with each other.
4. To secure good adaptation of the amalgam to the cavity walls and margins.

Smooth surfaced condensers are advocated. Formerly, serrated condensers were used but it was found that previously triturated amalgam oft times remained in the serrations and this may contaminate a subsequent mix, resulting in a corroded or tarnished amalgam restoration with questionable properties.

Much depends upon packing pressure in amalgam, i.e. strength is determined by both the amount of pressure exerted on the amalgam and by the thrust of the condenser on the amalgam, as well as the amount of mercury expressed.

We must differentiate between these two—packing thrust and packing pressure—which are two vastly different entities.

Packing thrust⁸⁻⁹ determines the number of pounds exerted by the condenser on the amalgam. Packing pressure represents the pressure exerted in pounds per square inch of the surface, by the condenser point. Skinner points out that a condenser point 1 mm. in diameter will result in a pressure of 80 pounds per square inch, whereas a condenser point 2 mm. in diameter will exert a pressure of only 20 pounds per square inch, using the same amount of thrust. This means that whenever a change is made from a smaller to a larger condenser point, more thrust on the condenser point must necessarily be exerted in order to establish the same amount of condensing pressure on the amalgam.

In recent years pneumatic condensation has come into greater use and has received more attention. There are many who advocate this method of condensation. With the introduction of pneumatic condensation, it is possible to produce an amalgam restoration with a greater ultimate crushing strength. Some report an increase of two per cent, others believe that the crushing strength of amalgam is increased up to six per cent. In comparing pneumatic condensation with heavy hand pressure the following results will obtain:¹⁷

1. Little effect on dimensional change.
2. Little effect upon flow.
3. Increases the one-hour crushing strength, but no effect upon the twenty-four-hour crushing strength.

When using mechanical-trituration and pneumatic condensation, the following is noted:

1. Reduced expansion.
2. Increased flow.
3. Six per cent increase in strength in twenty-four-hour period as compared with mortar and pestle,

and packed with heavy hand pressure.

Condensation of amalgam should not be carried to the extreme. It is, of course, possible to exert too much condensing pressure and this would be injurious to the pulp. Contrarily, when amalgam is too heavily condensed, it is possible that the resultant amalgam will actually shrink, in which case a defective restoration would result. It should be borne in mind that amalgam should be controlled to a point where the maximum expansion is no greater than 14 microns per centimeter. Amalgam has a greater coefficient of expansion than tooth structure. The coefficient of expansion¹¹ of amalgam is 25 while that of tooth structure is only 8.

The condensing process should be an orderly one. It is a stepping process similar in many respects to the stepping process used in gold foil, excess mercury should be eliminated and yet a mercury sheen should be seen on the amalgam in the cavity so that excessive proportions will properly bond themselves to the mass already condensed in the cavity.

There are of course dangers involved when using mechanical or pneumatic condensation.

1. Possible fracture of the enamel rods at the cavosurface of the cavity.
2. Excessive speed will result in "overworking" the alloy resulting in excessive shrinkage.
3. Excessive pressure applied too rapidly may cause some pulp damage such as traumatic injury.

MATRICES

The matrix band material is of steel shim and is but .002 inches thick. The height of the matrix band is very important. It must be higher than the marginal ridge of the tooth on which it is placed. It should be at least two millimeters higher than this ridge so that the amalgam along the buccal and lingual extensions at the cavosurface angle of the tooth is well condensed.

These are two areas in which the strongest amalgam is desired.

Requirements of a matrix:

1. Should withstand normal condensing pressure without distortion.
2. Permit easy withdrawal from the tooth.
3. Should be so placed that proper tooth contour is established.

Many types of matrix retainers are used, some are patented, others can be cut individually and applied. There is no one universally accepted type of matrix retainer which can be used in every operative undertaking. There are advantages and disadvantages to almost every type of retainer in use. Thus, the selection of the retainer is governed largely by the size, position and shape of the tooth concerned and individual preference. Some proponents of the individually cut and placed matrix believe it to be superior to all others. I don't feel that one can any more prescribe one definite type of retainer than one can prescribe a definite type of hand instrument. After all, end results count, namely an amalgam restoration which is free of gingival overlap, which has restored tooth form and contour, restored the tooth to proper function, meets crushing strength requirements, flow properties, etc., is the desired end.

Individually prepared matrices are recommended by many practitioners and, of these, the Sweeney type retainer and the Hollenbeck are preferable. The Hollenbeck retainer requires a small piece of matrix band material which is fitted to the proximal surface of the cavity. Two small holes are punched along the lingual and buccogingival edges of the band material. A piece of Nylon floss is laced through these holes and the band securely tied on the buccogingival surface of the tooth. Small compound triangles are then heated and forced between the interproximal space. The joining of these two compound plugs holds the band securely to the gingival floor and

reinforces the band as well so that adequate condensing pressure can be exerted without danger of distorting the amalgam.

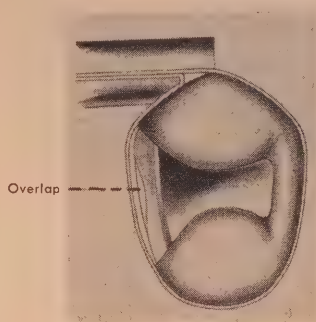


Fig. 9—Improper Fit will result in Overlap.

Importance of good gingival adaptation is illustrated in Figure 9. Because of the constriction of the tooth at the cervical border, frequently plastic or wood wedges must be used to ensure good adaptation.

Principles of carving:

The carving principle used in amalgam varies widely from that used for the inlay. The inlay pattern is carved from the wax to the tooth margin; this procedure used in amalgam would result in a submarginal restoration. Carving parallel with the margin is indicated when amalgam is the filling material used.

Carving should restore the lost anatomy of the tooth and should not be too deep.

1. Excessively deep carving results in undue distribution of masticatory stresses.
2. Too deep a groove may result in the retention of food to the extent that food impactions will occur with their subsequent trauma and the putrefaction process will discolour the amalgam.
3. The margin at the cavosurface angle will be weakened. (Fig. 10)

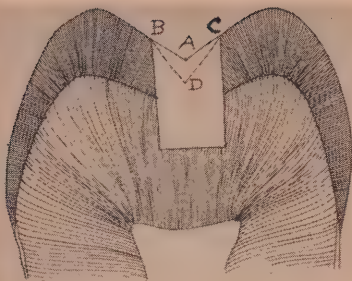


Fig. 10—The triangle formed by B, D, C is an acute angle and the margins at B will be weak. Triangle B, A, C is more of an obtuse angle and the margin at B will thus be stronger because more bulk supports this margin.

Finishing and Polishing :

Within five to seven days after condensation and carving of an amalgam restoration the maximum expansion should have been reached provided the amalgam has not been contaminated, either by palming, by saliva or by previously triturated amalgam. Amalgam is a friable material and cannot be burnished. Polishing instruments are rotated from the tooth to the amalgam. All polishing should be done under moist conditions. The generation of heat will bring mercury to the surface and such amalgams will tarnish and discolour readily. The transition point on amalgam is, according to Gray, 70 degrees centigrade. When amalgam restorations are left unpolished for months at a time and then polished they never take on as high a lustre as they would within a week after insertion. An electrical couple is formed by deposits on amalgam and this electrical couple is conducive to further erosion. Chemically this can be seen in a pitted and roughened surface. The amount of finishing and polishing applied to an amalgam has a direct relationship to erosion. Alloys of high copper content corrode and tarnish more readily than others. Gold finishing burs, fine stone, brushes used with moist pumice and rubber cups with moist whiting or

other polishing agent can all be used to impart lustre to the restoration.

Amalgam failures

Amalgam restorations do fracture. There are many reasons for this.

1. Careless application of the matrix band and improper condensation in which the band is pressed against the proximal tooth will frequently cause amalgam to break in the marginal ridge area when removing the band.

2. Unsupported and overhanging enamel rods permitted to remain along the cavosurface angle or along the gingival floor, which may subsequently fracture either when condensing the amalgam or during mastication.

3. Fracture along the margins may occur when plier-squeezed dry amalgam is used with heavy pressure (the dry amalgam being used as a blotter to absorb the excess mercury). The delicate amalgam margins at the cavosurface may be fractured during this condensing process. This may not be seen at the time by the operator, but will show up subsequently. Usually amalgam is blamed for this, whereas the fracture was instituted at the time condensation was taking place.

4. Fracture may be due to improper condensing technique. There are still some proponents of the Harper method of condensation. This is the spinning or burnishing technique. Here splashy amalgam is introduced into the cavity using a spinning or burnishing technique in filling the cavity. This frequently results in bringing mercury to the margins, an area where the strongest amalgam is desired and where, when this technique is followed, the weakest amalgam will be found.

5. Careless removal of the matrix band may result in fracture of an amalgam.

6. Improper carving also contributes to fracture.

Marginal ridges should be wide and rounded. Narrow and pointed marginal ridges frequently fracture. When amalgam restorations are carved too deeply

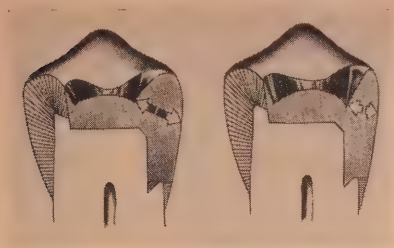


Fig. 11—Marginal Ridges.

a very acute angle is formed at the junction of the amalgam with the cavo-surface angle of the tooth. (Fig. 11)

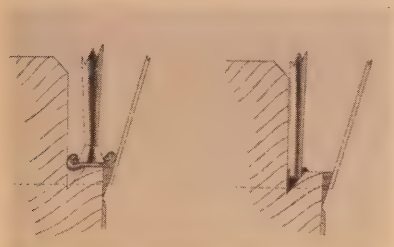


Fig. 12—Condenser Point.

The use of too large condenser point will also result in improper condensation of the amalgam particularly in areas such as the gingival channel. (Fig. 12)

The use of a semi-box rather than a box-type cavity will predispose in failure in an amalgam.

The use of amalgam in areas where it cannot be properly condensed carved and polished will also be a factor in the failure of amalgam restorations.

Teeth subjected to abnormally great stresses should be restored with hard gold rather than amalgam. Amalgam margins should not be placed over the points of cusps.

The slice type of cavity preparation is definitely contraindicated for amalgam. The result of improperly carrying the margins to their proper extension buccally and lingually is shown in this diagrammatic sketch. (Fig. 13) Amalgam will be weak at the margin.

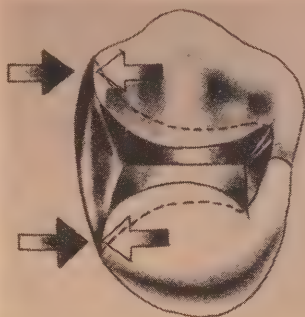


Fig. 13—Outline Form.

The dotted lines show proper width of the isthmus and proper outline form for the amalgam restoration.

The use of amalgam in cuspids:

Amalgam is definitely indicated in both upper and lower cuspids. A typical lingual lock type cavity is prepared, but, where as walls in the conventional cavity for the inlay all taper in a straight incisal or incisolingual direction for amalgam the cavity will be more retentive when the lock portion slopes lingually and the proximal portion, incisally. This makes for better retention. These restorations when properly condensed and polished meet aesthetic requirements and are very serviceable to the patient.

Non-zinc alloys:

Excessive expansions of amalgams due to contaminations received by palming in the hands had been reported by Angel and Crowell, Strader, Skinner and Jarabak, and Souder, Schoonover and Beall. Contamination with sodium chloride solution has been found to lead to excessive expansion.

The amount of sodium chloride present on the palm of the hand can be demonstrated by rinsing the palms in distilled water. When a drop of silver nitrate is added to the rinsewater, the characteristic milky white precipitate of silver chloride appears.

Liebig¹³ has very graphically demon-

strated this expansion of amalgam when contaminated with NaCl. Expansion tests on various alloys of known formula and which had been balanced and homogenized for a normal expansion within A.D.A. specifications were run.

The test specimens were contaminated by adding one drop of NaCl solution to the amalgam while mulling in the hand 5 times and adding 1 drop of solution to the mould during condensation. Otherwise the normal procedure was followed. For a control, specimens were made under conditions which precluded contamination by the hand.

Upon checking the data from these tests, he found that some correlation could be made between the amount of zinc added to the alloy and excessive expansion. It appeared that the excessive expansion was somewhat proportional to the zinc contents of the alloys.

He therefore prepared alloys with graduated amounts of zinc. The results of interferometer tests on these alloys over a period of one day and seven days are given in the following table.

The 0.3% amalgam showed an expansion of 3 microns over the initial 24-hour reading, and further observation covering a period of one month revealed no further change. Upon checking the 0.2% zinc amalgam, he found no signs of continued expansion on specimens 1 month old.

Zinc is used as a scavenger and as such one could expect it to be removed during the melting of these alloys. An examination of the table giving the interferometer results could indicate that up to 0.2 or 0.3% of zinc is burned out during the melting. A spectrographic analysis showed the presence of zinc in the 0.3% alloy but it was estimated to remain in far smaller quantities than that which was added.

While mulling the amalgam with salt solution, he noticed that the non-zinc and the low zinc amalgams had very harsh working properties and left a black spot on the hands. Smear tests on white paper of amalgams which were not contaminated indicated that the high zinc amalgams smeared less while the 0.1% and non-zinc amalgams

ABSTRACT

A report of the results of interferometer tests for normal expansion and excessive expansion made on amalgams containing various amounts of zinc.

Results of Interferometer Tests

Normal Expansion
Obtained by Precluding
Contamination

Excessive Expansion Obtained
by Contaminating the Amalgam
with NaCl Solution

Zinc Added Present	1 day	7 days	1 day	7 days	Difference
1.5	8.2 microns	*	1.1 microns	137 microns	+ 135.9
1.0	9.1 "	*	2.3 "	38 "	+ 35.7
0.6	8.5 "	*	7.4 "	22 "	+ 14.6
0.3	7.0 "	*	6.2 "	8.5 "	+ 2.3
0.2	6.7 "	*	6.0 "	5.8 "	- 0.2
0.1	10.4 "	*	8.2 "	7.9 "	- 1.3
Non zinc	11.2 "	*	13.0 "	12.0 "	- 1.0

*No change other than that due to temperature variations.

The 0.3% zinc alloy seems to be the dividing line between alloys which showed continued expansion and those which did not. However, to determine the significance of the slight expansion noted, he ran tests on this alloy for a longer period of time. After 10 days,

literally blackened the paper. The tendency to smear increased when the amalgams were contaminated with salt solution.

Operators of the alloy cutting machines report that chips from low zinc and non-zinc are extremely friable and

produce an unusually large amount of fines during comminution. The tendency of these alloys to form fines is found to be very pronounced during trituration with the mortar and pestle, and it has that subsequent disadvantage of making the properties of the amalgam more subject to the effects of variations during manipulation.

Apparently there are certain disadvantages in eliminating zinc from dental alloys in order to remove possibilities of excessive expansion when the amalgam becomes contaminated. But it is also apparent that excessive amounts of zinc added to the alloys causes excessive expansion. An alloy to which 0.3% zinc was added did not expand excessively when badly contaminated with sodium chloride solution and had the good working properties of the higher zinc alloys.

Zinc properly added during the melting process definitely improves the properties of the alloy and therefore the conclusion that is drawn is that, for the present, zinc should not be eliminated entirely but should be used in such quantities that whatever remains behind, after the scavenger action, is unable to produce excessive expansion.

The possibilities of the use of other scavengers and modifiers for dental alloys should be investigated, but any substitute for zinc must be thoroughly and exhaustively subjected to clinical and laboratory observations.

However, in order to fully evaluate all factors involved and formulate any sort of specification, we must first clearly define excessive expansion.

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Adamantinoma of the Mandible

by WILLIAM W. BRESLIN, D.D.S., Toronto, Ontario

MRS. RUBY S. married with one child, was referred by her dentist on August 9, 1948 for treatment of a condition of the right lower mandible. The extent and duration of her complaint proved very embarrassing to her, and prevented an accurate appraisal of her history. She did admit periodic swellings which had always subsided, but explained that financial responsibilities prevented her from consulting a dentist. Her immediate problem was a swelling in the lower jaw which extended over the occlusal surfaces of the teeth, and interfered with

the normal rest position of the mouth. (Figure 1.)

CLINICAL EXAMINATION:

The right lower molar area was slightly swollen. There were no palpably enlarged nodes of the neck. Patient was free of parasthesia, pain and headache. Temperature and pulse were normal. An upper partial denture was supported by few remaining teeth.

From the ascending ramus, a large soft lesion extended along the surface of the body of the right mandible, to



Fig. 1. Swelling in Lower Jaw.

include the right lower first bicuspid and cuspid. While the remaining teeth from the left first bicuspid to the right lateral were also present, only the right lower bicuspid and cuspid with absorbed roots were included in the boundaries of the mass.

The whole lesion was subject to considerable movement lingually and buccally, and was palpable to the lower border of the mandible on both sides.



Fig. 2. Absorbed Roots of Cuspid and Bicuspid.

RADIOGRAPHIC EXAMINATION:

Inter-oral films indicated considerable decalcification of the lower right mandible, with absorption of the bicuspid and cuspid roots. (Figure 2.) A. P. and lateral projections indicated a normal appearance of the left mandible. The right mandible revealed evidence

of a large multilocular cyst involving the whole body, and extending to the ascending ramus. The lesion measured about 7 cm. in length, revealing trabeculation within the cyst. There was a downward displacement of the mandibular canal. (Figure 3.)



Fig. 3. Lateral View of Right Mandible Showing Extensive Destruction.

OFFICE TREATMENT:

On August 9, 1948, 12 cc. of yellowish blood stained fluid were aspirated from the lesion through a 20 gauge hypodermic needle. A biopsy report proved none of the cells malignant.

When it was observed that relief of pressure was obtained, by repeating this procedure every three days, metal drains were introduced on September 20, 1948, for better controlled drainage.

SEPTEMBER 20, 1948:

A mandibular block injection was made on the right side with 2 cc. 1½% monacaine. At the junction of the ascending ramus and the body of the mandible, a 5 mm. diameter circular incision was made in the soft tissue overlying the alveolar ridge. A similar



Fig. 4. Metal Drains in Mandible.

incision was placed at the site of the first molar to permit a second entry into the cyst cavity. Two metal tubes (tubes were made from ointment nozzle dispensers) were fashioned to conform to the contour and depth of the cavity. Flanges extended over the mucosa. Patient was instructed in the method of removal and cleansing. (Figure 4.) Pathological examination of the tissue submitted, considered the condition typical of adamantinoma.



Fig. 5. January 24, 1949, Lateral View with Tubes in Position.

JANUARY 24, 1949:

Patient was observed regularly, and on this date the right lower bicuspid

and cuspid were extracted under mandibular block. A third tube was inserted into the cyst cavity through the bicuspid socket. Tubes in position. Lateral view. (Figure 5.) Some regeneration of bone was evident.

FEBRUARY 21, 1949:

The final operative procedure was done in the office under block anesthesia of the right mandible. Patient was given 3 grs. tuinal a half hour previously.

An incision was made along the alveolar ridge, from the involved portion of the ascending ramus to the lateral incisor. The mucosa was deflected lingually and buccally along the whole ridge. All fluid was aspirated from the cavity and the soft spongy tissue was removed with a large curette. A triangular shaped sequestrum of 15 mm. length was removed from the angle junction of the ascending ramus, and the body of the mandible. Biopsy indicated the diagnosis as adamantinoma. Soft tissues were replaced and sutured with braided black silk, and posterior area was packed with iodoform gauze.



Fig. 6. October 2, 1950, Lingual and Buccal Attached Denture in Position in Upper Jaw.

POST-OPERATIVE TREATMENT:

Capsules of amidopyrin, phenacitin, and aspirin were prescribed for pain. From September 20, 1948 to February 21, 1949 patient was attended at the office at intervals of three days. The tubes were adjusted and shortened to conform to changes in the cavity. They



Fig. 7. October 2, 1950. Lateral View of Regenerated Mandible.

were entirely discarded after February 21, 1949. The lingual mucosa was unattached at the periphery but by October 2, 1950 union with the buccal was completed. The appearance of the ridge was firm, and the body of the mandible was solid. (Figure 6.) Lateral view of the area on October 2, 1950 indicated regeneration of the diseased area. (Figure 7.)

CONCLUSION:

The treatment and observation of this case for a period of twenty-six months, indicates that a conservative approach is preferable where there is danger of involvement of the mandibular nerve with possible parasthesia. This procedure is applicable in those instances where there is a doubtful prognosis attending immediate surgical correction.

206 Bloor Street West

SIMPLE ORTHODONTIC TREATMENT METHODS

by MELVIN I. COHEN, D.M.D., Boston, Massachusetts

INTRODUCTION

IT IS THE PURPOSE of this paper to suggest simple methods of treatment for certain uncomplicated cases of malocclusion using materials with which the family dentist is thoroughly familiar and techniques that are almost embarrassingly simple.

As a result of a diversity of opinion amongst orthodontists and more especially amongst orthodontic educators, the undergraduate curricula varies from a simple form of teaching by lectures, only, to a more comprehensive program including the treatment of orthodontic cases. This has naturally led to a most inconsistent attitude on the part of the family dentist which varies from the complete indifference

on the one hand to the enthusiastic treatment of some orthodontic cases on the other.

Amongst the many valuable and important suggestions made by the Committee on Instruction in Orthodontics of the American Association of Dental Schools, the treatment of simple cases was suggested and endorsed.

ANTERIOR CROSSBITES

The type of malocclusion most readily and most often treated by the family dentist is the anterior crossbite. (Fig. 1) Many of these may be treated by simple biting exercises using the familiar tongue depressor. Where this therapy is unsuccessful, the next most simple treatment plan is the individual bite plane.¹ Construction of the bite plane may be as fol-

Instructor in Orthodontics, Harvard School of Dental Medicine; Associate Orthodontist, Children's Medical Center

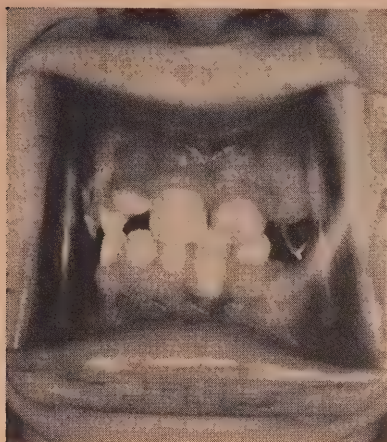


FIGURE 1
Simple anterior crossbite.

lows: First, fill an oversized aluminum crown form with fast-setting acrylic, place over the tooth and allow to set for the required time. If there are any undercuts, the acrylic will remain fast to the tooth and the shaping can be done in the mouth. If not, the acrylic impression can be removed and the finishing can be done at the

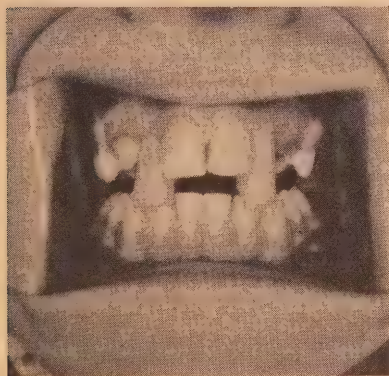


FIGURE 2
Aluminum shell stripped off a bilateral crossbite on maxillary laterals. Bite plane on lingual aspect of acrylic shaped so that bite is well open posteriorly, and lower incisors exert forward thrust on maxillary lateral incisors.

bench and the final forms cemented. After the aluminum shell is stripped off, the acrylic is shaped so that each time that the patient bites, the bite is held open 2 to 3 mm. posteriorly while the full thrust of the lower jaw is directed outward against the offending tooth. (Fig. 2) If the treatment is to be successful, it will work in one to two weeks. Longer treatment time by this method is contraindicated.

PROTRUDING AND SPACED MAXILLARY INCISORS COMBINED WITH A FUNCTIONAL POSTERIOR OCCLUSION

This type of malocclusion is frequently seen in patients who have no dento-facial disharmony. It is to this group that the following treatment is suggested: The first requisite is a stone cast made from a good alginate impression. Clasps are placed on the appropriate teeth and anterior extensions are bent to provide a loop for attachment of the elastics. These extensions rest against the lateral incisors and may be adjusted for movement of these teeth and proper positioning of the elastics. (Fig. 7B) The acrylic is brought only to within 4 to 6 mm. of the palatal surfaces of the maxillary incisors, thus allowing room for the posterior movement of these teeth. To avoid flattening of the arch anteriorly, slight pressure should be exerted on the lateral incisors by



FIGURE 3
Upper removable with anterior elastics.



FIGURE 4

(A) Occlusion before treatment, (B) occlusion after three months' treatment with appliance in Figure 3.

bending the ends of the hooks towards these teeth. An example of three months' treatment with the appliance in Figure 3, may be seen in Figure 4. This appliance is worn all the time, changing the elastics about once in two days. Occasionally, hypertrophy of the palatal gingivae is noted, at which time the acrylic should be relieved, carefully rounding the edge and polishing highly. Following the retraction of the anterior segment, acrylic may be added to the space palatal to the incisors, and the appliance may be then worn at night as a retainer.

NIGHT SHIELD

Another method for retracting the anterior teeth, when the posterior occlusion is functional and there are diastema between the incisors, is by means of the night shield—an appliance introduced by Warwick James in England.² The most satisfactory material for making these shields is $\frac{1}{8}$ " plexiglass. An illustration of the plexiglass shield may be seen in Figure 5. The changes shown in this case occurred in 4 to 5 months. The shield fits the oral cavity loosely and is effective

against the anterior teeth by means of the combined lip and cheek pressure which in turn are transmitted back through the plexiglass to retract the anterior teeth. There are many methods of fabricating the shield, but the simplest is to take a compound impression of the entire vestibule as shown in Figure 6A, and pour this in stone. (Fig. 6B) When the stone has set, fill the depressions between the teeth and the space between the mandibular and maxillary incisors with a thick mix of plaster to produce a smooth surface as shown in Figure 6C. It is important that the compound impression be a little wider across the molar region than the corresponding width in the patient's mouth. If this is not true, the resulting shield may be wedged at this point, making posterior movement impossible. This precaution can best be affected by widening the buccal impression when first removing it from the mouth—a time when it has not completely chilled. Very often it is helpful if 2 to 3 mm., representing the central incisors, are trimmed away. This procedure insures the concentration of stresses upon the protrusive incisors but should be em-

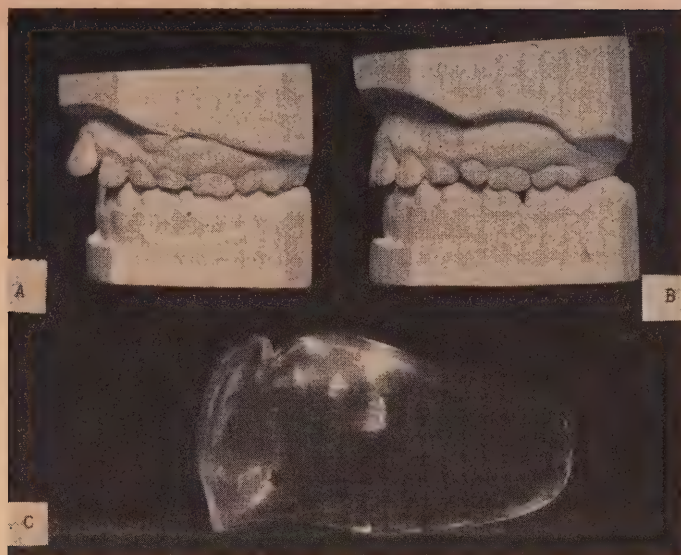


FIGURE 5

Treatment with shield. (A) occlusion before treatment. Functional posterior occlusion with spaces between the incisors. (B) occlusion after treatment. (C) night shield made of plexiglass.

ployed with caution because if over-trimmed, the resulting shield will be difficult to keep in place. A section of $\frac{1}{8}$ " plexiglass is warmed over the open flame until it is soft and pliable, avoiding overheating as this introduces porosity. This softened piece of plexiglass is pressed against the cast and held until it cools. Pressure can be applied with a gloved hand, a towel, chamois, or a section of inner-tube. The excess is trimmed to the mucobuccal fold extending as far as possible without encountering interference from the anterior border of the mandibular ramus or masseter muscle. In fitting the shield, it should be carefully checked to avoid impingement on the soft tissues which will either cause sore spots or interfere with the action of the shield. It is imperative that full cooperation be enlisted from the patient, otherwise, failure is certain; it must be worn every night. Contraindications for this treatment are, (1)

frequent colds, allergies, or obstructions making nose breathing impossible and, (2) any doubt of full cooperation.

REMOVABLE APPLIANCE FOR THUMBSUCKING

Not infrequently, parents come to the dentist disturbed by the protrusion of the anterior teeth associated with a thumbsucking habit. According to some investigators,³ it is unwise to attempt correction of this habit until the permanent teeth have begun to erupt. Lawes⁴ reported that out of 156 attempts at correction in infancy, 134 failed. The overwhelming number of failures coupled with the possible unfavorable psychological implications of treatment in infants point to the advisability of delaying treatment until about five years of age — an age when cooperation can be more readily expected. If the child is a night thumb-sucker, only, the plexiglass shield



FIGURE 6

Models illustrating fabrication of shield. (A) compound buccal impression. (B) model poured in stone. (C) model made smooth by filling in irregularities with plaster—outline of shell drawn to muco-buccal fold.

described above is often very effective. This acts simply as a mechanical block to the insertion of the thumb. It also acts as an orthodontic appliance

to retract the incisor teeth if spaces are present between them. However, not infrequently the child sucks his thumb during the day as well. In these cases, the removable appliance with anterior elastics can be modified by embedding two wires across the palate. (Fig. 7) The failure of the thumb to contact the palate and create definite suction is sufficient to discourage the habit. In one case, no wires were embedded on the palate, and the habit was broken. The anterior elastics retract the incisors as described above.

SUMMARY

Four appliances which can be made very simply with materials familiar to the family dentist have been described. They are indicated in uncomplicated cases of malocclusion.

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- (4) Lawes, A. G. H.: Psychosomatic Study Into the Nature, Prevention and Treatment of Thumbsucking and Its Relationship Into Dental Deformity. *D.J. Australia* 22:167-194 Abstract 1950.

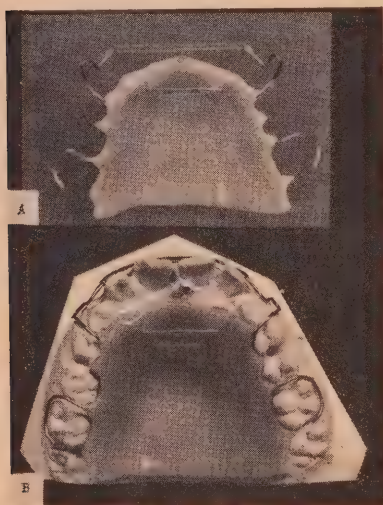


FIGURE 7

Habit breaker. (A) two .036 nickel-chrome wires imbedded in lingual acrylic. (B) appliance on model showing elastic pressure.

The Treatment of Procaine Dermatitis With Topical Application of Hydrocortone Dental Ointment

by HARRY HOFFER, D.D.S., Regina, Sask.

IN A series of articles published by Strean et al.^{1,2} Spies et al.³ and Ballestero et al.⁴ the possible role of cortisone and hydrocortisone in dental practice was discussed. While these publications deal mainly with the use of these hormones in the treatment of patients visiting dental offices, it is the purpose of this communication to discuss a condition which may affect the dentist himself and may even force him to discontinue practice.

Allergic dermatitis has plagued dentists for a long time and treatment for this condition has not been very satisfactory. The condition which has been particularly refractory to treatment is the dermatitis resulting from contact with local anesthetics.

CASE REPORT

Early in 1952 the writer experienced a recurrent dermatitis involving both hands. After a long series of skin tests it was concluded that the cause of the sensitivity was procaine. The dermatitis was refractory to treatment—histamine, dermatologic ointments and a huge variety of other therapeutic agents were tried. The condition became progressively worse resulting in a trip to Worrall Hospital, Mayo Clinic, where a diagnosis was made of exfoliative dermatitis and urticaria. Additional skin tests showed that there was sensitivity to acrylic resins also. After twenty-two days' treatment in the hospital I was allowed to return home, but unable to continue dental practice because of recurrent exfoliation of both hands.

When the Journal of the American Dental Association announced the pro-

gram of the 1952 meeting held in St. Louis, I noted that Strean and Horton would present a scientific exhibit dealing with the use of hydrocortisone acetate in dental practice. Feeling that all other modes of therapy had failed, I decided to make the trip to St. Louis and discuss my case with these investigators. In September 1952 I attended the meeting of the American Dental Association and visited the booth manned by Dr. Lyon P. Strean. After extensive inquiry into my case Dr. Strean recommended the topical application of HYDROCORTONE Dental Ointment (2.5%), followed by the use of a similar ointment of 1% concentration. Beneficial results were observed a few days after treatment with this hormone was initiated. Not only was I able to return to practice, but also resume my activities in a symphony where I play the violin. Intermittent treatment has continued for nine months and the use of the ointment is necessary only when exfoliation threatens to reappear.

CONCLUSIONS

Hydrocortone Dental Ointment has proved to be an effective agent when applied topically in the treatment of exfoliative dermatitis. A new agent has been added to the dentist's armamentarium and it holds out considerable promise for the treatment of various refractory diseases.

ACKNOWLEDGEMENT

The author wishes to thank Dr. John H. Laurie, Merck & Co. Ltd., Montreal, and Dr. Lyon P. Strean, Merck & Co., Inc., Rahway, N.J., for materials supplied.

The Forum

THE IMPACTED MANDIBULAR THIRD MOLAR

by LESLIE M. FITZGERALD, D.D.S., F.A.C.D.

Summary of paper in Oregon State Dental Jour., April 1953

1. The aetiology of the impacted tooth is not certain. It may be evolutionary, environmental or hereditary.

2. A good history, clinical and roentgenographic and, at times, a microscopic examination are essential for a correct diagnosis.

3. Impacted teeth may be present and remain impacted throughout life without causing any disturbance.

4. Impacted teeth may be the cause of neurological symptoms, formation of cysts and a focus of infection.

5. Removal of the impacted mandibular

third molar should be a question of surgical judgment following the evaluation of all findings, the end results being the deciding factor.

6 Trauma in mandibular third molar surgery is more severe than that associated with removal of other teeth, due to the anatomic relation of the osseous and soft tissue structures contiguous to the mandibular third molar.

7. Post-operative roentgenograms should be routine following the removal of impacted mandibular third molars.

FLUORINE AND DENTAL CARIES

by CECIL I. COBURN, D.D.S., D.D.P.H. and ROGER G. KNIPE, M.D., D.P.H.

The Elgin-St. Thomas Health Unit, St. Thomas

*Canadian Journal of Public Health
(The National Journal of Preventive Medicine)*

1. Allowing for the relatively small number of eligible Aylmer (Fluoride content 1.2 ppm) children there appears to exist in that group a much higher degree of immunity to dental caries, when compared with St. Thomas (Fluoride content 0.0 to 0.3 ppm) and the Villages (Fluoride content 0.0 ppm). The percentage of children with caries-free permanent teeth especially in the 12 to 14 year group, is considerably higher in Aylmer than in the corresponding group in St. Thomas and the Villages.

2. In caries experience (D.M.F.)

permanent tooth surfaces, Aylmer children exhibit considerably less dental decay per child than the children of St. Thomas and the Villages.

3. The Aylmer native-born (or those who have lived there continuously since the first year of birth) 12 to 14 years (Table IV), have a lower caries experience of permanent teeth than the total Aylmer children of the same age group (Table V).

4. There does not appear to be any appreciable difference in comparisons between the St. Thomas children selected for the study on the basis of

residence, and the total number of St. Thomas children.

5. The caries experience of children in the Township of South Dorchester, where there is evidence of fluorides in private wells, closely parallels that of children of the same age resident in Aylmer.

6. There appears to be a difference in the pattern of the carious process in permanent teeth, when fluorides near the optimum level are present in the drinking water.

7. Although some differences in oral hygiene were noted, they do not influence the St. Thomas-Aylmer comparison where oral hygiene habits were similar.

CONCLUSIONS

While this study indicates a higher immunity to dental caries when fluorides are naturally present in drinking water, the degree of this immunity cannot be accurately measured without subsequent comparisons. Other variables such as racial background, dietary habits, and heredity, have not been investigated, as they were considered beyond the scope and purpose of this survey. The primary objective of this report is to stimulate interest in artificial fluoridation. It is hoped that the result of this investigation may be of local value as preliminary data to a municipality undertaking fluoridation as a method of reducing the incidence of dental decay.

THE COMMON DISEASES OF PRACTISING DENTISTS

by ARTHUR BERNSTEIN, M.D., and JACOB L. BALK, Newark, N.J.

Condensed from the J.A.D.A. — May 1953

The anxiety state is the chief occupational disease of Dentists is the main conclusion from a study done in Newark on a group of 56 dentists over a period of years. Of the 56 dentists 36 were under 45 years of age, and 20 were 45 years or over. All patients were given thorough physical examinations, and the results of these examinations are as follows:

Anxiety State—An anxiety state was the most frequently occurring condition. It was observed in the entire group of 56 in 24 instances, (42.1 per cent), in the age group under 45 in 19 instances (52.7 per cent) and in the group of 45 or over in 5 instances, (25 per cent).

Gastrointestinal Disorders — Gastrointestinal disorders constituted the

second largest group of conditions observed. Of the 56 dentists, there were 20 with disorders of this type (35.7 per cent) 12 in the younger group (33 per cent) and 8 in the older group (40 per cent).

Other conditions observed are Cardiovascular disabilities, Respiratory ailments, Rheumatic conditions, Malignant conditions and one condition of Occupational Etiology, that of a patient with postural low-backache was found.

Though it is true that 56 cases represent a comparatively small group with a limited statistical value certain significant trends are observable. Anxiety or exhaustion states appears to be a definite occupational hazard among dentists.

A PRELIMINARY REPORT ON THE USE OF CAPPING OPERATIONS

by HAROLD C. WITTICH, D.D.S., Minneapolis, Minn.

Condensed from North-West Dentistry — Oct. 1952.

The Pedodontia Department of the University of Minnesota about four years ago started using a material

which in many instances can be used as a capping material and cement base simultaneously. A definite procedure

for the capping of deciduous pulps was established and under what resulting conditions pulps should be capped. The material being used is a preparation containing iodoform, calcium-hydroxide, zinc oxide, eugenol and phenol. It is a commercial product compounded by a pharmacist, a powder and a liquid, which when properly mixed can always be used to cap the pulp and in many cases can be used as a cement base as well.

The capping of pulps of deciduous teeth is favorable under the following conditions:

1. When there has been no tooth-ache, with the possible exception of pain under mastication.
2. When all caries can be removed without causing more than one small exposure.
3. When the exposure has been made and there is pain and bleeding.

The procedure for capping is as follows:

Immediately following the exposure and a favourable diagnosis, the cavity preparation for an amalgam filling is completed. Where the cavity prepar-

ation is completed, the tooth is isolated by means of cotton rolls or rubber bands. If the exposure is on the proximal surface of the tooth the preparation can be used as a capping material and cement base. The cavity is sterilized with a solution of Alcohol-Phenol, 60 to 40 per cent. If the excess of this liquid is absorbed when sterilizing of cavity is performed, little or no damage will be done to exposed pulp tissue. The preparation is mixed to a creamy consistency and with the explorer or small instrument is teased over the exposure. If the exposure occurs of the occlusal surface it is best to insert over the preparation an oxyphosphate cement base, then the amalgam filling. All together 243 teeth have been capped for a sufficient period of time to base findings. Of that number only thirty-two developed an abscess after they were capped and these were all extracted. The remaining 211 after being subjected to the various tests are all remaining vital and root resorption is proceeding normally. This gives 87 percent success of the total 243 teeth capped in this investigation.

HEALTH SERVICE COSTS

(Digest of an Editorial appearing in the *British Dental Journal*—

April 21st, 1953)

The Minister of Health (Great Britain) announced his intention to appoint a small committee to make "an independent and objective inquiry" into the cost of the National Health Service. It is premature to discuss the possible methods which this committee may adopt in the course of its deliberations. It is, however, clear that an inquiry covering such a wide field and involving so many complex issues will necessarily take some considerable time. The Dental Profession may well have one more opportunity of directing attention to the defects in the scheme which the experience of those years has revealed and of putting forward

alternative means by which the services of its members could be utilized to promote the health of the nation.

The matter would be simplified if it were only the dental part of the scheme which was under scrutiny and the profession were to be asked some such question as how, within definite financial limits, the funds allotted to the service could be expended to the greatest advantage. Dental disease affects a larger proportion of the population, particularly those in the younger age groups, school children and workers, than does any other disease and that, short of complete prevention

early treatment affords the most economical means of averting the greater evils consequent upon oral sepsis. The cost of treating disease has risen and many serious students of the subject have been driven to the conclusion that the direct cost of treatment is likely to go on increasing with every fresh advance. The gradual rising of the age level of the population will be accompanied by an increase in the incidence of the chronic illnesses to which elderly people are subject — a factor which will again lead to an increase in costs.

On this thesis the nation is faced with the problem that the expanding cost of treating disease must be met out of the products of the labour of a slowly dwindling proportion of the total population, and the finance of any health service must ultimately be judged against this background. Thus,

it is argued, in the long run conflict between humanitarian and economic motive can hardly be avoided. Put in the simplest terms on the dental plane such a conflict might evolve a choice between providing new dentures for elderly patients at the expense of the State and paying for the filling of cavities in the fissures of the children's first permanent molars. The first might be regarded as a highly desirable thing to do, whereas the latter forms the essential foundation of any satisfactory dental health service. This has already been recognized, but when questions of the cost of the service are under discussion it cannot be reiterated too often that, in the present state of our knowledge, no health service can make any pretension to being complete unless it makes adequate provision for the early treatment of dental disease.

RHEUMATOID ARTHRITIS

Conclusions of Discussion in Jour. Mich. State D. Assoc., Feb. 1953

(1) The aetiology of rheumatoid arthritis is unknown; (2) early reporters who frequently blamed dental foci of infection as the cause of rheumatoid arthritis (a) cited either no cases or too few cases to be statistically significant, (b) were over-impressed with the occasional dramatic remission of symptoms of rheumatoid arthritis following the removal of a dental focus of infection, (c) did not take into account that there is often spontaneous remission of symptoms of rheumatoid arthritis, and (d) failed to consider that as many people with dental foci of infection do not present the symptoms of rheumatoid arthritis as those with dental foci of infection who do present the symptoms; (3) other workers have demonstrated in a large number of cases that the removal of oral foci of infection has not been beneficial and in some cases was detrimental; (4) no infectious agents involved

in rheumatoid arthritis have ever been demonstrated; (5) no experimental animal has been found in which the disease can be reproduced; (6) a large share of pulp-involved teeth do not contain bacteria; (7) the remission of symptoms of rheumatoid arthritis occurring with jaundice and pregnancy cannot be correlated with dental foci of infection, nor can the relief of symptoms of rheumatoid arthritis upon the administration of ACTH or cortisone be correlated with dental foci of infection; (8) penicillin and sulphonamide compounds have not been found effective in the treatment of rheumatoid arthritis as reasonably would be expected if it were an infectious disease. Therefore, one must conclude that the role of dental focal infection in the aetiology of rheumatoid arthritis has always been on tenuous footing—which footing at present appears to be discredited.

ANNOUNCEMENTS

● **AMERICAN DENTAL SOCIETY OF EUROPE**, Annual Meeting in Bergen, Norway. August 4-7, 1953, Hon. Secretary, F. Douglas Derrick, 140 Park Lane, London, W.1.

● The **MARITIME DENTAL CONVENTION** is to be held at Keltic Lodge, Ingonish Beach, Sept. 3-5, 1953.

● **AMERICAN DENTAL ASSOCIATION CONVENTION** at Cleveland, Ohio, September 28 to October 1.

● **10th ANNIVERSARY MEETING OF THE AMERICAN INSTITUTE OF DENTAL MEDICINE**, Palm Springs, California, October 25-29. For information apply to the Executive Secretary, 2240 Channing Way, Berkeley 4, California.

● **POSTGRADUATE TRAINING IN PERIODONTIA AND ORAL MEDICINE, NEW YORK UNIVERSITY COLLEGE OF DENTISTRY** announces its full-time course in Periodontia and Oral Medicine for one academic year, September 21, 1953 to May 21, 1954, leading to a certificate. Half-time two year courses are also given.

Apply to Secretary, Postgraduate Division, New York University College of Dentistry, 209 East 23rd Street, New York 10, N.Y.

● **TUFTS COLLEGE DENTAL SCHOOL ANNOUNCES THREE COURSES IN OCCLUSO-REHABILITATION** by Dr. Louis Alexander Cohn. Lecture and Seminar Course September 21-25. Tuition \$250. Special Participation Course, seven months beginning October 9, 1953. Enrolment limited to 12. Tuition \$1000.00. Graduate Course leading to the M.S. or M.S.D. Degree. This is a full-time 18 months course.

Apply to Director of Graduate and Postgraduate Studies, Tufts College Dental School, 136 Harrison Avenue, Boston 11, Mass.

● **UNIVERSITY OF TORONTO DENTAL ALUMNI ASSOCIATION** Annual Meeting Dinner and Dance, Friday, October 16, Homecoming week-end.

● **EASTERN ONTARIO DENTAL ASSOCIATION CONVENTION** will be held at Chateau Laurier Hotel, Ottawa, September 20, 21, 22.

● **ART EXHIBIT IN CONNECTION WITH CANADIAN DENTAL ASSOCIATION MEETING**, Mount Royal Hotel, Montreal, October 18, 19, 20 and 21. All dentists, members of their families, and office staffs are invited to exhibit paintings, photographs, sculpture, or other works of art they may have produced as a hobby. Full information later.

● The **SECOND INTERNATIONAL DENTAL CONGRESS** in Mexico City sponsored by the Mexican Dental Association, will be held Nov. 15-21, 1953.

● **NORTHERN ONTARIO DENTAL ASSOCIATION CONVENTION** will be held in New Liskeard on September 11 and 12. Clinicians for the meeting are Dr. George C. Hare and Dr. E. R. Bilkey.

● **ANNUAL MEETING OF THE INTERNATIONAL DENTAL FEDERATION**, Oslo, Norway, July 26 to August 1, 1953.

G. H. Leatherman, Secretary
35 Devonshire Place, London W.1, England.

● **THE GRADUATE SCHOOL OF MEDICINE OF THE UNIVERSITY OF PENNSYLVANIA** announces a new and longer course in Orthodontics, under the direction of Dr. Paul V. Reid, to be given commencing September 9, 1953, and running for sixteen consecutive months. Dentists who successfully complete this sixteen-month course may matriculate for the degree of Master of Dental Science under the preceptorship plan of the University. For further information write to the Dean, Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4, Pa.

● **TEMPLE UNIVERSITY** announces a two-weeks course in **ORTHODONTIA** for practising orthodontists only, beginning January 24, 1954, under the direction of Dr. Robert H. W. Strang. Cost \$200.00.

Apply to Dr. Louis Herman, Director of Postgraduate Studies, Temple University School of Dentistry, 3223 North Broad Street, Philadelphia 40, Pa.

JOINT MEETING
**THE CANADIAN DENTAL ASSOCIATION
 THE ANNUAL MONTREAL FALL CLINIC**

UNDER THE AUSPICES OF
THE COLLEGE OF DENTAL SURGEONS, P.Q.
MONTREAL, QUE. OCTOBER 18-19-20-21, 1953

1. **Dental Anatomy**—Table Clinics: Human Tooth Dissection; Dental Histology; Anatomical Drawing. Clinicians—Drs. Gustave Gauthier, Julien Bussières and Robert Pelletier.
2. **Crown and Bridge**—Table Clinics: Bridge Abutments; Crown and Bridge; Reversible Technique for Crown and Bridge. Clinicians—Drs. Jean-P. Trottier, M. Kobichaud and Roger Charette.
 Motion Pictures—Two sound motion pictures describing techniques for the preparation of abutments for jacket crowns.
3. **Diagnosis**—Table Clinics: Examination of Patients—Records—General Direction of the patient; The Updegrave x-ray Technique for the Temporo-mandibular joint; Treatment Planning. Clinicians—Drs. A. L'Archeveque, Jean Fontaine and Georges Pelletier.
 Exhibits: Radiographs of Unusual Interest; Oral Soft Tissue Lesions. Clinician—Dr. Jean Fontaine.
4. **Endodontia**—Table Clinics; Pulp Testers; Medication for Endodontia; Instrumentation for Endodontia. Clinicians—Drs. Gilles Allaire, Guy Poirier, and François Cardin.
 Visual Education: Case Histories in Endodontia; Tooth Bleaching. Clinicians—Drs. Vincent Tremblay and P. Emile Belsile.
5. **Operative Dentistry**—Techniques for acrylic fillings, Amalgams, Gold Foil, Gold Inlays, Silicates—Clinicians—Names to appear at a later date. Electroplating; Pulp Capping. Clinicians—Drs. Gilles Baril, and J. Arthur Renaus.
 Motion Pictures—Dental Amalgam. Clinician—Dr. J. Arthur Renaus; Airdent Technique; Clinician—Dr. Herve Deschenes. Film to be supplemented by clinical demonstration.
 Visual Education: Gold Foil Restorations. Clinician—Dr. Roger Coulombe.
 Exhibits: Cavity preparation.
6. **Oral Surgery and Anaesthesia**—Table Clinics: Medication in Oral Surgery; Human Dead Dissection; Anatomical Landmarks for Local Anaesthesia. Clinicians—Drs. G. de Montigny, A. Raymond and Claude Madore.
 Chair Clinic: Techniques for Impactions. Clinician—Dr. J. A. Senecal.
 Motion Picture: Temporo-mandibular Dysfunction—Anatomy, Injection. Clinician—Dr. Harry M. Seldin.
7. **Orthodontics**—Table Clinics: Overcoming of vicious habits by Psychotherapy; Construction of Space Maintainers using stainless steel crowns; Treatment of Linguo-versions of incisors in Class I; Construction of Space Maintainers. Clinicians—Drs. Paul Geoffrion, Otto Bengie, G. Beausejour, and Louis Lepine.
 Motion Pictures: Impression Technique using Gnostostat; Vicious Habits of Children and their Results; Total Anodontia; Technique for The Facial Impressions. Clinicians—Drs. Paul Geoffrion, Gabriel Lord, Onil Hebert.
 Chair Clinics: Treatment of Labio-version by means of an acrylic Appliance; Treatment of certain malocclusions by means of modified Crozat Appliance; Radiographic Technique of the Cranium using Margolis Cephalostat. Clinicians—Drs. Austin Oliver, Duncan Kennedy and Howard Oliver.
8. **Paedodontics**—Table Clinics: Space Maintainers: Pulp Treatment of Deciduous Teeth. Clinicians—Dr. Benoit and Adelard Leblanc. Chair Clinic: Topical Application of Fluorides. Clinician—Dr. J. L. Charpentier.
9. **Periodontics**—Chair Clinics: Sub-gingival Curettage; Equilibration of Occlusion; Gingivectomy and Flap Operation. Clinicians—Drs. J. L. Charpentier, Georges Pelletier, and Rolland Gendron.
10. **Prosthesis**—Table Clinics: Planning, Designing and Casting of Partial Dentures; Duplication of Complete Denture using the Hanau Hooper Duplicator; Obturators for Cleft-Palate Patients. Clinicians—Drs. Henri Brouillet, Camille Patenaude, and Gerard de Montigny.
 Chair Clinics: Technique of Full Impressions using Compound combined with Plaster: Impressions for Relining; Teeth Setting on Anatomical Articulator; Closed-mouth Technique for Impressions; Special Prosthesis. Clinicians—Drs. Romeo Poupart, Victorien Dube, Eugene Lussier, Jean Nadeau.
 Motion Pictures: Functional Impressions. Clinician—Dr. Jean Nadeau. Also on the program there will appear presentations of basic sciences—Diet and Nutrition, Bacteriology, Pathology, Biology, Chemistry, and Physiology.

Cheques or money order for registration fee of \$15.00 should be made payable to The Montreal Dental Club and mailed to Dr. D. B. Ward, Joint Convention Committee Secretary, Suite 309, 1414 Drummond St., Montreal, Que., together with application for hotel reservations.



MONTREAL, THE METROPOLIS FROM MOUNT ROYAL



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Editorial

OUR NEW EDITOR

Dr. Wesley J. Dunn is our new editor. He inherits the pilot's role in directing a journal, proud of its outstanding position in the realm of dental journalism.

For many years the Canadian Dental Association has been particularly fortunate editorially. How many of us who receive the Journal of the Canadian Dental Association every month, have even stopped long enough to consider for a moment what constitutes an editor's task in preparing this regular monthly publication. It would be ridiculous for anyone to assume that any person could do such a job—he simply can not, for it requires a particular type of person. These particular persons are not to be located everywhere for they must possess some talents that only few have been fortunate enough either to have acquired or developed. It would be a long list of personal attributes that would be placed beside the name of a successful editor. To mention only a few, we list such qualities as: editorial acumen, leadership in the chosen profession, mature judgment, a deep regard for duty and obligation, unselfishness, and many others.

Surely, in the many years during which the Journal has been published the Canadian Dental Association has been particularly fortunate. In Dr. Harry M. Garvin, whose retirement, as editor of the Journal, has been announced, the Association has had a man who gave of himself unstintingly and unselfishly in so many ways and for so many years, that dentistry might be a better profession. He possessed all the qualities; he used them well. Only Dr. Garvin and his close associates know the troubles and efforts in getting the Journal on its way. We all know now the splendid results of these efforts. Dr. Garvin, calling upon all his resources in the long list of attributes necessary for a successful editor, has through the years provided for Canadian dentists a publication that will ever be a memorial to his editorial prowess.

Dr. T. R. Marshall, the able assistant editor, the running mate of the editor, was ever from the time of his appointment to be found working patiently and unselfishly in an effort to provide what is best in scientific information and items of general interest for the profession. His efforts have always been to encourage Canadian dentists to write for their national journal.

The French Section of the Journal, under the able guidance of Dr. Gerard de Montigny, together with his assistants, Dr. Paul Geoffrion and Dr. Armand Fortier, have for years provided for the Journal articles that are so favourably recognized at home and abroad. Indeed, the Journal, through all the men who have been devoting so much of their time and energies, has found itself like so many other Canadian institutions on the upper level in international repute.

Now we have a new editor. On him rests a heavy responsibility. Because of the composition of qualities considered so essential in an editor, Dr. Wesley J. Dunn came into the picture. The Canadian Dental Association feels that again it is particularly fortunate. Dr. Dunn is a young man endowed with great ability, endless energy and a profound interest in the profession of dentistry. Born in Toronto, he received his early education in that city and continued first at Victoria College and later graduated from the Faculty of Dentistry, University of Toronto. In his under-graduate days it was obvious that Dr. Dunn possessed qualities that some day would label him for leadership. Active in University affairs, where he was called upon to function as director on so many occasions, he left his alma mater taking with him at graduation one of its coveted Honour awards.

In professional life Dr. Dunn conducts a general practice in dentistry with the greater part of his time devoted to dentistry for children. He has served on many dental boards and committees in offices ranging from chairman to member. The Canadian Society of Dentistry for Children, the Ontario Dental Public Health Committee, The Toronto Academy of Dentistry, the Dental Committee, Ontario Division, Canadian Red Cross Society, have all had the benefit of his counsel.

Editorially, Dr. Dunn served as assistant editor of the Journal of the Ontario Dental Association and later as editor of Oral Health, a post he held until the time of accepting his new role in editorial efforts. In both of these offices he displayed remarkable editorial ability, and enjoyed the utmost confidence of all with whom he worked.

Yes, the Canadian Dental Association is happy to have Dr. Dunn as its editor. It realizes that a heavy task has been handed to him by the standards set by his predecessors. All who know him well can happily predict that due to his demonstrated past achievements and his fresh enterprising spirit only success can accompany his efforts. Coming as he does from the younger group of the profession, he brings boundless energy and enthusiasm. His modesty, his ability to organize, his faculty of selecting men outstanding in their fields to assist him, are all factors which augur well for the future of the journal of the Canadian Dental Association.

In his new office so vital in the structure of the organized profession of dentistry, he has the best wishes from across Canada.

We present to you our new editor, Dr. Wesley J. Dunn.

P. G. ANDERSON, CHAIRMAN
COMMITTEE ON PUBLICATIONS

BOOK REVIEWS

Problems in Dental Local Anesthesia by Dr. Mendel Nevin. Published by Dental Items of Interest Publishing Co., Inc., Brooklyn, N.Y. 760 pages. Price \$11.50.

This book written by Dr. Mendel Nevin is a comprehensive work, as the title suggests, about problems encountered in local anaesthesia. The greater portion of the book is taken from the publication "Modern Dentistry" in which practitioners seek solution to their problems in local anaesthesia. However, the book covers fully, the history of anaesthesia, the composition of anaesthetics, their physiologic action, armamentarium and methods of sterilization.

The book explains simply and with a multitude of illustrations the technique of intra and extra oral injections of local anaesthetics. Pre and post operative medication and complications are well explained. This book is essentially a well written reference for the practitioner in dentistry. D. M. TANNER

"Clinical Periodontology" by Irving Glickman, B.S., D.M.D., F.A.C.D. Published by W. B. Saunders Company, Philadelphia. Illustrated with 742 figures. 1019 pages including index. Price \$15.00.

"Clinical Periodontology" by Irving Glickman is particularly appropriate for a reference book or text for students of dentistry who are interested in periodontal and associated problems. The comprehensive and orderly table of contents make it very easy for the reader to locate in the book the section of special interest to him. The contents appear to be well proportioned into the main divisions of etiology, diagnosis, related principles and theories, therapeutic procedures and prognosis. The numerous headings and sub-headings within the body of the text are a further aid in the use of the book as a handy reference.

The author has included an amazing amount of material dealing with all aspects of the subject and has apparently made a conscientious effort to separate the known facts from the unproven premises and theories. He has included at the end of each chapter an extensive list of references which are very convenient for those interested in delving further in the field.

The text is clearly and simply written making it easy and interesting to read. To add to the clarity over 700 illustrations are included which are well set out, plainly captioned and readily followed.

I believe Dr. Glickman should be congratulated for the excellent way he has brought so much information together under one cover and for the valuable addition of a most useful reference book to the field of periodontology.

W. G. MCINTOSH

Principles and Technique of Exodontia by Frank Wendell Rounds, A.B., D.D.S., Sc.D. (Hon.) and Charles Elder Rounds, A.B., D.M.D. 407 pages, with 365 illustrations. Published by The C. V. Mosby Company, St. Louis, Mo. Price \$10.00.

This book is written in very simple language and serves as a useful reference for the student and the general practitioner. It deals with the whole field of Oral Surgery, continuing the methods of the late George Winter with the authors' notifications.

It includes an illustrated description of the required armamentarium, and describes the sterilization and care of the same. The volume begins with a brief description of the anatomical landmarks, and stresses particular attention to the preoperative considerations which would indicate or contraindicate surgery. The evaluation of the patient's health is discussed with methods of obtaining a proper history.

Ten chapters are devoted to the technique of the extraction of teeth. Three additional chapters deal with supernumeraries, fusions, hypercementoses, and deciduous teeth. One lengthy chapter describes the complications in exodontia, mishaps, fractures of teeth, exposed and irregular process, fracture of maxillary tuberosity, extraction of adjacent teeth, bruising lips and cheeks, wounding tongue, loss of teeth in sinus, and fractures of the mandible.

Radiography in relation to the impacted third molar is treated very fully. Diagnostic differentiation and proper evaluation of unerupted, suppressed, malposed, and impacted molars is made. A classification of the difficulties attending the removal of the impacted

third molar is included in the closing chapters. The book concludes with mention of odontectomies and surgical discipline.

W. W. BRESLIN

The Physiological Foundation of Dental Practice by L. L. Langley, M.A., Ph.D., and E. Cheraskin, M.A., M.D. 511 pages. Illustrated. Published by C. V. Mosby Company, St. Louis, M. Price \$9.25.

As the title of this book indicates it is written for the use of dental students and practitioners, but more especially for the former. Physiology is sometimes taught without particular emphasis for medical or for dental students. Too often the dental students are

grouped with medical students and, because of the larger number of medical students, the instruction leans toward the application to the practice of medicine.

The book is well illustrated by clear diagrammatic sketches and contains a great deal of interesting and valuable information and it might seem the part of folly to criticize it. The writer is of the opinion that more detailed study could be given to topics most directly associated with dentistry. The book contains a great deal of general physiology elucidating the phenomena of life, and is exceedingly useful as a text; but it would be of even greater value to the dental student if it dealt more intensively with dental physiology.

A. C. LEWIS

ROYAL CANADIAN DENTAL CORPS NEWS

Her Majesty Queen Elizabeth II has given Her approval to the appointment of Brigadier E. M. Wansbrough, O.B.E., M.M., E.D., C.D., D.D.S., F.I.C.D., D.G.-D.S., and Colonel J. F. Edgecombe, O.B.E., E.D., D.D.S., F.I.C.D., A.D.D.S., (R.F.), as Honorary Dental Surgeons to Her Majesty.

The R.C.D.C. was represented at the Coronation by Capt. F. M. Nesbitt (Active Force), Capt. J. M. Calvert (Reserve Force) and Pte. W. J. Arnsby (Active Force).

The R.C.N. Coronation Squadron sailed from Halifax on May 7, 1953 for England with three dental officers and sub-sections. Major C. Cornish aboard H.M.C.S. "Ontario," Major R. B. Jackson and Capt. W. H. Harrington aboard H.M.C.S. "Magnificent" and "Quebec" respectively."

Major G. R. Covey, who commanded 25 Cdn. Rd. Dent. Unit in Korea for the past year, has returned on rotation leave.

Lieut.-Col. F. R. Drewry, has been promoted to the rank of Colonel and has been appointed D.D.G.D.S. (Navy), A.H.Q. Colonel Drewry is a native of Warkworth, Ont., graduated from the University of Toronto in 1918 and practised in Cobourg, Ont. He served with the 22 Medium Battery R.C.A., N.P.A.M., and was Officer Commanding at the commencement of the Second World War. He was transferred to the C.D.C. and proceeded overseas in June 1940. He was Command Dental Officer (R.C.A.F.)

United Kingdom throughout his overseas service and returned to Canada in December 1942, to be appointed C.D.O. Western Air Command. On the formation of the R.C.D.C. (A.F.) October 1946, he assumed command of No. 11 Coy. R.C.-D.C. (A.F.). In June 1949 he was moved to Trenton to become C.D.O. of No. 13 Coy. R.C.D.C. (A.F.). In March, 1951 he was appointed D.D.D.S., A.H.Q.

Major B. P. Kearney, M.B.E., has been promoted to the rank of Lieutenant-Colonel and appointed to command 25 Cdn. Fd. Dent. Unit in Korea. He departed for Korea May 15, 1953. Lieut.-Col. Kearney was born on February 12, 1915, in Galt, Ontario and received his early education there. He graduated from the Faculty of Dentistry, University of Toronto in 1936. He also attended post-graduate courses at the Forsyth Dental Infirmary, Boston, and the University of Rochester. Lieut.-Col. Kearney was appointed to the C.D.C. in 1940 and proceeded Overseas in 1942. He served in the United Kingdom and Northwest Europe before returning to Canada in 1945. From 1945 to 1953 he served in Ontario and the Northwest Highway System. Lieut.-Col. Kearney is married and has three children, now residing in Ottawa.

Major W. R. Cunningham, 42, a native of Souris, Man., has been promoted to the rank of Lieutenant-Colonel and appointed Officer Commanding, 35 Field Dental Company with the R.C.A.F. Air Division H.Q. at Metz, France. Lieut.-

Col. Cunningham has been Assistant Director of Dental Services at National Defence Headquarters, Ottawa, since December 1951. He was a prisoner of war in Hong Kong from 1941 to 1945. Educated at Public and High Schools in Souris, Man., he graduated from the University of Toronto Dental College in 1934. He was appointed to the Dental Corps upon the outbreak of the Second World War in 1939 and has served continuously ever since. Lieut.-Col. Cunningham will leave for Europe with his family early in June.

Major J. K. McNally has been promoted to the rank of Lieutenant-Colonel and appointed Senior Procurement Officer in the R.C.D.C. Lieut.-Col. McNally was born in Northfield, Quebec, in 1906 and was educated in Ottawa, Ontario. He was employed by The Dental Co. of Canada Ltd. in Ottawa, Montreal, Toronto and Western Canada. He joined the National Refining Co. in 1930 in Saskatoon, Sask., representing this firm in Western Canada, Western Ontario and Toronto. Lieut.-Col. McNally enlisted in the C.D.C. in January 1940 and was commissioned in June 1941; serving as a Quartermaster in Canada, U.K. and Continental Europe. On return to Canada he was appointed Quartermaster with No. 13 Coy, R.C.D.C. in February 1946. In July 1946 he was posted to Ottawa and appointed Stores Officer.

Cpts. G. E. Windsor, L. A. Richardson and W. R. Thompson have been promoted to the rank of Major. Major Windsor, 31, is a native of Kamsack, Sask. Completing senior matriculation in 1940 he enrolled at the University of Alberta for one year, then transferred to the University of Saskatchewan where he received his B.A. in 1943. He enlisted in the R.C.A.F. in August 1943 and qualified as Navigator. He was commissioned as Pilot Officer in March 1945 and was retired in April 1945. Major Windsor on graduating from the Faculty of Dentistry, University of Alberta, July 1949, was appointed a Captain in the R.C.D.C. and posted to Western Canada. Since that time he has served a year in Europe and is now employed at H.M.C.S. "Naden," Esquimalt, B.C. He is married with two children. Major Richardson, 27, was

born in Viking, Alta. He completed High School matriculation at Ryley, Alta. and Strathcona High School, Edmonton. He enlisted in the R.C.A.F. in April 1944 and qualified as Navigator in March 1945. He was discharged in May 1945 in the rank of Sergeant. Major Richardson on graduating from the Faculty of Dentistry, University of Alberta in 1949 was appointed a Captain in the R.C.D.C. and was posted to Western Canada. Since that time he has served a year in Europe and is currently employed at Petawawa Military Camp. He is married with one child.

Major Thompson, 29, is from Campbellford, Ont. He completed senior matriculation in 1941 and was enrolled in dentistry in the University of Toronto until 1943. He enlisted in the Canadian Dental Corps in June 1943, transferred to the R.C.A.F. in December of that year and trained as a Navigator. He was promoted to Pilot Officer in March 1945 and was retired in April 1945. Major Thompson graduated from the Faculty of Dentistry, University of Toronto in 1949, was appointed a Captain in the R.C.D.C. and was posted to Petawawa Military Camp. Major Thompson is now serving in Korea. He is married with two children.

Captain J. V. P. Chatwin recently wrote and successfully passed the Staff College Entrance Examinations. This is the first time that an officer of the R.C.D.C. has passed these examinations. Capt. Chatwin, 32, was born in Regina, Sask., where he received his early education. During his school days, he served for two years with the R.C.A., N.P.A.M. He entered the Royal Military College in the fall of 1939 and on graduating in the spring of 1941 was appointed a Lieutenant in the 2nd Armd. Regt. (Ld.S.H.) C.A.S.F. He served with that Regiment in England, Italy, Northwest Europe and Canada. He retired to the Reserve Force in August 1946 with the rank of Major. On graduation from the Faculty of Dentistry, University of Alberta, he was appointed to the R.C.D.C. in 1951 and posted to No. 13 Coy, at Camp Borden, where he is at present serving. He is married with two children.



CANADIAN DENTAL ASSOCIATION NEWS

FROM THE OFFICE OF THE SECRETARY

National Health Program — On May 1st last the Hon. Paul Martin, Minister of National Health and Welfare made an important announcement in the House of Commons respecting the next steps in extending the national health program. He referred to the success of the program during the past five years, pointing out that the former Prime Minister had stated in first introducing the program, that the federal grants represented "first stages in the development of a comprehensive health insurance plan for all Canada".

The new announcement makes available to the provinces these new grants for child and maternal health, medical rehabilitation and radiological services. The sums of monies to become available to the provinces under these grants are large.

The grant for child and maternal health will be made available in an effort to make sure that, as far as possible, every Canadian mother can have access to proper health care before, during and after the birth of her child.

The rehabilitation services grant is to provide improved health services for disabled citizens. Funds under this grant will be used for three main purposes (1) for the training of professional rehabilitation workers; (2) for medical rehabilitation equipment and (3) for rehabilitation health services.

The grant for radiological services will be used to provide better facilities and services to detect disease and ill health. This new grant makes possible the setting up of modern diagnostic services particularly in rural areas where such services do not exist, as well as in some other communities. The grant will also be used in the training of radiologists.

These grants will lead to greatly expanded services in the above named health fields.

New Ontario Representatives to C.D.A. Board—At the Annual Meeting of the Board of Directors of the Royal College of Dental Surgeons of Ontario held May 25-27th, 1953, the following were appointed as Representatives to the Board of Governors, Canadian Dental Association for the ensuing biennial term.

Dr. C. M. Purcell, Pembroke
Dr. P. G. Anderson, Toronto
Dr. C. L. Strachan, London
Dr. R. O. Winn, Kitchener.

Of these appointments Dr. Purcell has served on the C.D.A. Board for four years and is re-appointed. Doctors Anderson, Strachan and Winn are new appointees.

Additions to the Library

ACKERMAN, F. *Le mecanisme des machoires (naturelles et artificielles). De la theorie a la pratique, de la clinique a la technique.* 1953. 819 p. illus.

A.D.A. COUNCIL ON PHARMACY AND CHEMISTRY. *Useful drugs.* 15th ed. 1952. 262 p.

ASGIS, J. A. *Public health and dental care. A guide to developments in the United States.* 1952. 80 p.

AUBREY, M. and FREIDEL, C. *Chirurgie de la face et de la region maxillo-faciale.* 1952. 879 p. illus.

BERLINER, A. *Clinical periodontology.* 1953. 249 p. illus.

BETT, W. R. *Osler, the man and the legend.* 1951. 125 p. illus.

BROCKINGTON, C. F. *The principles of nutrition for practitioners and students.* 1952. 137 p.

BULL, H. C. *X-ray interpretation.* 2nd ed. 1951. 406 p. illus.

COLYER, J. F. and SPRAWSON, E. *Dental surgery and pathology.* 9th ed. 1953. 1151 p. illus.

COPE, V. Z. *Human actinomycosis (What the general practitioner ought to know about).* 1952. 80 p. illus.

DAUBRESSE, E. *L'Origine des maladies; essai de synthese.* 1951. 244 p.

EVANS, SIR C. L. *Principles of human physiology originally written by E. H. Starling.* 11th ed. 1952. 1210 p. illus.

FRIANT, M. *Anatomie comparee cranio-faciale et dentaire.* 1953. 114 p. illus.

FROHSE, F. and BRODEL, M. *Atlas of human anatomy.* 1952. 88 p. illus.

GT. BRIT.—The Council of the Pharmaceutical Society. *Antibiotics: a survey of their properties and uses.* 1952. 290 p. illus.

GT. BRIT.—War Office, Code No. 6711. *Training notes for dental radiographers.* 1952. 48 p. illus.

HARRIS, L. J. *Vitamins. A digest of current knowledge.* 1951. 244 p. illus.

HARVEY, W. C. and HILL, H. *Food Hygiene.* 1952. 511 p.

HEWER, C. L. *Recent advances in an-*

- aesthesia and analgesia including oxygen therapy. 1953. 440 p. illus.
- JONES, W. E. The scientifically designed partial veneer or three-quarter crown. 1952. 61 p. illus.
- KRANTZ, J. C. and CARR, C. J. Pharmacologic principles of medical practice. 1951. 1116 p. illus.
- KRUG, E. E. and McGUIGAN, H. A. An introduction to materia medica and pharmacology. 1951. 6th ed. 612 p. illus.
- LARSELL, O. Anatomy of the nervous system. 2nd ed. 1952. Copyright 1951. 564 p. illus.
- LUNDQUIST, C. Oral sugar clearance: its influence on dental caries activity. 1952. 121 p. illus.
- MARMASSE, A. Dentisterie operatoire. Tome 1, Dentisterie therapeutique. 1953. 516 p. illus.
- SHAW, F. G., and SCOTT, D. C. Practical exercises in dental mechanics. 134 p. illus.
- SIGERIST, H. E. A history of medicine. Primitive and archaic medicine. 1951. 564 p. illus.
- TOVERUD, G. and others. A survey of the literature of dental caries, prepared for the Food and Nutrition Board, National Research Council, Washington, D.C., 1952. 567 p.

NEWS FROM THE PROVINCES

BRITISH COLUMBIA

The **Edward H. Angle Society of Orthodontia**, met in Victoria on May 3rd to May 7th. This Society was formed in 1930 and was named in honour of the late Dr. Angle a pioneer in the Orthodontic field. Two of the outstanding speakers on this occasion were Dr. Harold J. Noyes, Dean of the University of Oregon Dental School and Dr. Allan G. Brodie, Dean of the University of Illinois School of Dentistry.

The **British Columbia Dental Association** plans to set up a system of Bursaries to encourage young dentists to work in Rural British Columbia Centres. Officials said the extreme scarcity of Dentists in the Districts of British Columbia was responsible for the development of the Bursary Plan.

Complete details have not been worked out, but the general theme is to make available sums of money that will encourage students from Rural Areas to study dentistry and then return to the district to practice. The tentative plan is for the bursary to be made up of contributions from the British Columbia Dental Association, College of Dental Surgeons of British Columbia, The British Columbia Health Department and the local Districts.

SASKATCHEWAN

An Island in a northern Saskatchewan Lake has been named "Keown Island" in honour of Dr. L. V. Keown. He was a pioneer Moosomin Dentist who served the Town School Board for a record term of 51 years.

Moose Jaw Dental Society—

President	Dr. L. Hare
Vice Pres.	Dr. W. J. Mullen
Sec. Treas.	Dr. J. S. Meyer

Dr. J. Schacter, Orthodontist of Saskatoon, presented his clinic in Space Maintenance for the General Practitioner at the May meeting. Dr. Schacter has presented this clinic at a number of the cities in the province under the auspices of the Saskatchewan Dental Society and in so doing has rendered the members of the profession a very valuable service. He endeavors to assist the profession to cope with the urgent problem of prevention of malocclusion in the office of the general practitioner.

Dr. Hare, the President, presided at the meeting and Dr. Lowey, the President of the Saskatchewan Dental Society appropriately expressed appreciation.

L. D. H.

ALBERTA

The Faculty of Dentistry, University of Alberta.

1. Dr. Harold Samuels, of the Periodontia Department, was the main speaker at the regular monthly meeting of the Central Alberta Dental Society held at Red Deer in March. Dr. Samuels gave as his paper "The Management of the Periodontal Pocket."

Dr. H. R. MacLean, Professor of Operative Dentistry and also President of the Alberta Dental Association, also spoke briefly to the same meeting on association business.

2. Dr. Sperry Fraser, Professor of Prosthetics, was invited to present a clinic to the Pacific Coast Society of Prosthodontists. The meeting was held at the Mira Mar Hotel in Santa Monica,



Honourary Life Members in the Edmonton and District Dental Society. Back row, l. to r.: Dr. Carmichael, Dr. Decker, Dr. MacDonald, Dr. Chinnick. Front row, l. to r.: Dr. McIntyre, Dr. Gilchrist, Dr. Eastwood.

California. His subject was "Interridge and Occlusal Relations."

Dr. Fraser also attended the Academy of Denture Prosthetics held at the Ambassador Hotel in Los Angeles just prior to the Pacific Meeting.

3. The academic staff held its annual spring dinner on Friday, May 22nd. The program was under the chairmanship of Dr. R. V. Blackmore. During the course of the evening Dr. J. D. McLean, who has accepted the position of Professor of Dentistry at Dalhousie University, was presented with a farewell gift.

The Edmonton and District Dental Society honoured pioneer Edmonton Dentists by awarding life memberships to six who had completed 40 years of practice—A seventh, Dr. H. A. Gilchrist was presented with a gift to mark his fiftieth anniversary in dentistry. Among those honoured during the banquet were:—Dr. M. A. McIntyre; Dr. C. E. Eastwood; Dr. J. B. Carmichael; Dr. R. S. Decker; Dr. T. F. MacDonald; Dr. W. H. Chinneck.

At this particular meeting Dr. William Orobko was elected President for the ensuing year.

NEW BRUNSWICK

The **Canadian Army Active Force** is short of Dental Officers because of the fact that fewer dental students are graduating from the University and the population of the country is ever increasing. This fact was brought out by Brig. E. M. Wansbrough, Director General of Dental Services for the three armed forces, in an address given recently to members of the St. Johns Dental Society. Colonel K. M. Baird, Commanding Dental Officer for the Maritime Provinces with Headquarters at H.M.C.S. Stadacona, Halifax, spoke informatively on the use of alginates in preparation for bridge and partial denture construction. He showed a film on this subject.

On May first the **Saint John Dental Society** held its last of a series of dinner meetings for the winter season. The guests of honour were Brig. E. M. Wansbrough, D.G.D.S., from Ottawa, Lt.

Col. K. M. Baird, O. C. of No. 12 Coy RCDC, Halifax and Dr. R. S. Langstroth, the Director of Dental Services, Dept. of Health in Fredericton. The president, Dr. A. D. Bona was in the chair and welcomed the guests. In the evening Lt. Col. Baird gave a very excellent paper on the use of hydrocolloids and alignates in the indirect inlay technique. His talk was illustrated by a coloured moving picture which gave a graphic illustration of the various steps in the technique. It was decided to hold a summer outing in the country at the home of the N. B. Dental Society president, Dr. L. O. Leger. Dr. Leger has been host on many previous occasions and has always given the members a very cordial and hospitable welcome.

ONTARIO

The Kingston and District Dental Society held its final dinner meeting of the season with Dr. J. H. C. Gowland presiding. The guest speakers—Dr. R. A. Kelly, M.O.H. for Kingston, Dr. G. T. Mitton, Associate Professor of Dental Public Health at the faculty of dentistry, University of Toronto and Dr. A. W. S. Wood, Chairman of the Dental Public Health Committee of the Ontario Dental Association were introduced by the President Dr. E. E. Johns. A discussion period followed the presentation of dental public health talks by the above named men. At the conclusion of the meeting a committee was elected to further study the matter.

Dr. Norman L. Robinson has been elected President of the Hamilton Dental Association, succeeding Dr. Donald Moore.

Dr. E. W. Paul, who for many years has served organized dentistry in many capacities, has retired as president of the Dental Legal Protective Association of Ontario. Over the years Dr. Paul has given excellent stewardship and it was with regret his resignation was accepted. The new president is Dr. H. W. Reid.

At the recent biennial inauguration Meeting of the Board of Directors of the Royal College of Dental Surgeons of Ontario, Dr. Murray Purcell of Pembroke was chosen as Chairman of the Board. Dr. Purcell brings to this important position experience of many years in dental affairs.

Others elected were:—Vice-President: Dr. R. J. Godfrey, Toronto. Executive:

Dr. R. J. Godfrey, Chairman; Dr. M. J. V. Keenan; Dr. F. J. Furlong; Dr. M. C. G. Bebee; Dr. R. O. Winn.

The New President of the Ontario Dental Association is **Dr. J. H. Johnson**. Dr. Lloyd Grose in a very capable manner presented Dr. Woods with his Past President's Jewel then turned to Dr. Johnson and installed him as the new president. The other members of the Board of Governors are:

Hon. President, Dr. Russell G. Woods, Watford; President-Elect, Dr. L. R. Braden, Ottawa; Historian & Archivist, Dr. L. M. Grose, Toronto; Secretary-Treasurer, Miss D. Jutton, Toronto; Dr. J. A. Boyd, Stratford; Dr. C. L. Strachan, London; Dr. H. R. Bateman, Mount Dennis; Dr. K. M. Phillips, Welland; Dr. F. H. Shepherd, Toronto; Dr. E. E. Johns, Kingston.

Dental Public Health Committee

Dr. A. W. S. Wood, Toronto; Dr. H. A. Swales, Toronto; Dr. E. A. White, Toronto; Dr. J. B. Macdonald, Toronto; Dr. S. T. Peterkin, Toronto; Dr. R. R. Butler, Toronto; Dr. D. L. Rife, Toronto; Dr. C. G. Monteith, Toronto; Dr. Marjorie Jackson, Toronto.

Committee of Benevolence

Dr. J. A. Bothwell, Toronto; Dr. Russell Hyde, Hagersville; Dr. R. S. Woollett, Toronto.

Ontario Dental Association Convention

It all looks so easy. The smile never left President Dr. Russell Wood's face (that is, not in public) during the entire three days of **The Ontario Dental Association Convention**. The program was good, exhibitors' displays good, attendance quite good, perhaps a little below last year and the organization pretty nearly perfect as far as the casual observer could see. Each part of the program moved along in well ordered succession. Most of us never stop to consider the preparation that goes on all year long so that we can come together each May to enjoy a grand convention and profitable holiday.

Our modern conventions are too big to take in every feature presented. Of course it is planned that way because as individual dentists, we have our own particular interests. The group clinic is the best example of this. Here, there were 9 lectures going on all at one time for two mornings of the meeting; all of these lectures were well worth attending and while some were repeated yet it was not possible to hear all.

The writer found **Dr. Elfenbaum** had

a very splendid informal discussion entitled "Diagnosis—Key to Practice Building." He defined diagnosis as a systematic procedure related to—

1. Relief of pain or discomfort.
2. Oral rehabilitation.
3. Esthetics.
4. Co-relation of Oral and Systemic disease.
5. Simple check-ups.
6. Discovering of something which the patient appears quite unaware e.g. Carcinoma in the mouth.

The lecturer deplored some dentist's tendency to limit his practice to the "3 R's of dentistry—Repair, Remove and Replace." He said, "Dentists must stop looking at the patient as an articulator with legs. A dental defect is a body disease and the day is approaching when a dentist will be admired because of his knowledge of dental disorders and symptoms as they relate to body disease and not because of his knowledge of dental appliances." Those who heard Dr. Elfenbaum were well repaid for the time spent with him.

Dr. Stanley D. Tylman was another outstanding lecturer and teacher. His subject was Crown and Bridge Prosthesis. In masterly fashion both in his paper and his clinic he discussed biological influences on desiging Bridge construction; he implied there was no place for the free end bridge unless it was constructed with a rest recessed into an inlay for definite support.

Dr. F. H. Nealon kept his audience alert while he discussed the use of Acrylic as a filling material. It was his view that satisfactory acrylic fillings must be placed by the brush technique, that is without pressure. He suggested the acrylics were no panacea as a filling material for anterior teeth and re-iterated that silicate still has a place, particularly in small proximal cavities in incisor teeth.

Dr. W. D. Clark of Hamilton is becoming more and more popular in his presentation of Complete Denture Problems. He has a lot of good ideas that make for a better denture service and he succeeds in showing his audience how it is done.

Dr. W. J. Johnston of Montreal gave a nice lecture presentation on the newer accepted aspects of Root Canal therapy. Saving the tooth through modern endodontic treatment has much to commend it in a practice of conservative dentistry.

Dr. Kurt Thoma, of course, is a highly skilled Oral Surgeon of wide reputation and his lectures were of particular interest to those who specialize in Oral Surgery. He had much to offer in the

way of diagnosis, which perhaps was more important to the average dentist than his methods of treatment.

The writer found **Dr. K. J. Paynter** most interesting in his address "**Research and Tomorrow's Practice.**" Dr. Paynter took his listeners back 50 years and compared the advancement in the modern conception of dental treatment as compared with that of the earlier period. Then he gave a few hints concerning present day research and what the various projects could lead to in another 50 years. Would that more of us could have the perception of dental progress possessed by our keener young men.

There were other lecturers too which rounded out the most practical phase of the convention program—Dr. Mark Boyes, Dr. Dave MacDonald, Dr. M. N. Rockman, Dr. Moyers and Dr. Jenkins, Dr. Coy and Dr. Frechette. These men in their respective field of interest had valuable ideas and suggestions for those attending their clinics.

In the formal paper section of the meeting **Dr. Kurt Thoma** and **Dr. Stanley Tylman** gave illustrated addresses in keeping with their reputation as leading teachers of our day in their respective fields. Their knowledge is so extensive it is hard to take in all they have to offer but they do broaden our vision and inspire us to higher levels of service.

Dr. W. G. McIntosh in his paper was perhaps a little more practical; he discussed "**Methods of Periodontal Pocket Reduction.**" Those who have heard Dr. McIntosh marvel at his wonderful grasp of his subject and the facility of his teaching methods, logic and his classification of periodontal pockets with the method of local treatment was most instructive to the dentist in general practice who is confronted daily with the problems of periodontal disease. Dr. McIntosh made this all too often neglected phase of dental practice appear easy to perform with good result.

The Luncheon Meetings were outstanding features of the convention. The speaker on opening day was the **Rev. George W. Goth of London** and judging from his address he would have very few vacant pews in his church on Sunday mornings. Mr. Goth attempted to appraise attitudes, tendencies and customs of our times and concluded with some suggestions that would help to correct them. He said, "We are living in an age when the INDIVIDUAL counts for less and less—we are confronted with a disintegration of human personality—we are living in an age of confusion and

despair. All the gadgets we have at our disposal to make life's duties easier will not give us any Utopia. In large cities the individual does not count for much; we are in a machine age where our people are losing individuality and becoming mere cogs in the wheel of collectivism. There is a tendency to-day to have more control at headquarters and less individual responsibility." The speaker continued by saying,—"The only basis on which we can establish a strong society is on the individual level. Personal relationships is one of the greatest things in life. It is better for us to make our own decisions rather than have others make them for us even though they be experts." Mr. Goth had some suggestions for creating invulnerability in the individual. He said there is too great a tendency to-day to become a nation of spectators. We lack a community spirit of participation; we are content to look on. The individual should be taught to stand on his own feet and to make a significant personal contribution in community affairs. We should all take some responsibility as citizens in our democracy. To do this we must have a vision and a faith. "This is not an age of strong dynamic faith," continued the speaker, "yet if we are to survive there are some things we must believe in—we need faith and we must have ideals, and we must strive to adhere to them with all the commitment we can muster;" that is, if we are to develop and maintain a strong individualism. The speaker closed with a sentence sermon, "Give ourselves not only technically to our job but spiritually to our task." Mr. Goth will be remembered for his timely message of inspiration in this coronation year.

The **Public Health Luncheon** was addressed by **Dr. Leroy Johnson**, formerly dean of Harvard School of Dental Medicine. His was a scholarly address packed full of trends in dental education and application of dental service in practice. It was an address one should read to understand and enjoy its message.

While President Woods and his able Board of Governors provided the foregoing major attractions, they did not forget to supplement them with other features that are expected and enjoyed by everyone. The Sunday evening musicale, as a sort of Home Coming reception for members and friends, is now an accepted part of our Convention. Dr. Vic. Large and his committee are to be congratulated for another fine evening. Then the President's dinner and dance

arranged by a large ladies committee under the chairmanship of Mrs. J. H. Johnson was as usual the social function of the meeting. Mr. Stanley St. John seems to provide just the right kind of dance music for all to have a good time. The ladies' tour to the Hospital for Sick Children was of great interest to any who had not been around before. This was concluded by a buffet supper and bridge at the hotel which rounded out a good afternoon and evening for the ladies. For the men there were the usual class re-unions, fraternity dinners and a luncheon for the members and ex-members of the Royal Canadian Dental Corps. All were wonderful occasions to bring back old associations and to chat with old friends.

The closing feature of the program was the usual table clinics by fellow dentists, Dental nurses and Assistants and this year a new group introduced themselves—the Dental Hygienists. This is a most important part of the convention because it is the training ground for our young clinicians of the future. It is unfortunate these clinics are not always given the prominence in our programs that they deserve for their instructive value and for the sake of encouragement to those, who many times, go to a lot of trouble in preparation. All of us could be well repaid for a visit to the table of these younger clinicians because they have a lot of splendid ideas and suggestions to improve our practice methods. The calibre of the clinics this year for the most part were very fine and warranted better patronage if the clinician is to be encouraged to greater effort another year.

In all, the **Convention maintained the high standards** which have been set by **The Ontario Dental Association** over the years. Dr. Woods, in his presidential address, spoke of the need for more dentists and increased educational facilities. He expressed that perhaps a Faculty of Dentistry might be established at the University of Western Ontario. He urged a professional perspective of preventive dental care and support of research to find new and better methods of the preventive approach. President Woods commended the work of the Dental Public Health Committee of the Association under the Chairmanship of Dr. A. W. S. Wood. He also expressed his pleasure at the obvious teamwork existing between our dental organizations and referred particularly to the Royal College of Dental Surgeons, the Faculty of Dentistry with the Ontario Dental Association and

all of these with the Canadian Dental Association. Dr. Gustave Ratté, our National President was in attendance to bring greetings and express his satisfaction with Ontario's contribution to Canadian dentistry. President Woods suggested harmony should be our motive at all times as we strive to keep our profession on the highest level. This can only happen when the younger and the older members are brought together in a common purpose.

Our Convention was an example of harmonious co-operation and teamwork of a lot of individuals who gave unstintingly of their energy and talents. President Wood and his Board of Governors staged a very satisfactory convention; as the program unfolded so smoothly the management of it all seemed to easy—it was because of good planning and organization.

During the Convention Honorary Memberships were presented to Dr. Fred Williamson of Hamilton by Dr. E. A. Grant and Dr. S. M. Kennedy of London by his able son Dr. Fred. In honouring these outstanding dentists the Association has gained prestige for itself. Both men have been leaders of Dental thought not only in their respective communities but they have been given high official recognition in Ontario.

T.R.M.

The Ontario Dental Public Health Council held its annual breakfast meeting as usual on the Monday of the Ontario Dental Association Convention. President Dr. Harold Craig of Belleville was master of ceremonies at a well attended meeting of one hundred. Dr. L. A. Pequegnat, Medical Officer of Health for Toronto was the Principal speaker. In his address Dr. Pequegnat reviewed the city's dental program under the able direction of Dr. E. A. Grant and pointed out that the budget for the Dental Division in 1952 was \$182,000.00 or 8% of the health department's appropriation. There are 78 persons in the dental staff—18 full time and 59 part time. In 1952 some 60,000 elementary and high school students were surveyed and the results disclosed one half of the former and two thirds of the latter group had dental defects. The number of cavities averaged two and three respectively. Some 25,000 children needing dental treatment had their needs completed during the year.

Tabulation of Orthodontic needs was 12% for primary school children and 41% for secondary school students. Only children under 10 years were admitted to the Orthodontic clinic which was assisted financially by the federal government.

The speaker implied that Dental Public Health was preventive dentistry in action. He emphasized education of the individual and encouragement in personal responsibility for good dental health; this is an important force in the public health field. He commended a program of dental care which included an organized contact with the child at the time of school enrollment and a dental examination made at the school in the presence of the parent. "Make the parent a central figure in your educational approach," suggested the speaker and "Encourage the parent to bring all pre-school children in the home to the school for dental examination."

Dr. Pequegnat suggested that it was the duty of the public health worker to urge parents to enlist the family dentist for individual service and supervision needed. On the other hand he said, "If the school dentists are to encourage parents to take their children to the private dentist he in turn must co-operate as a teacher, advisor, agent of prophylactic care and purveyor of skilful dentistry."

Good nutrition as set forth in the CANADA HEALTH RULES, regular home dental hygiene and professional dental care should be equally emphasized. "The basis of our appeal may be didactically possible but the ingraining of habit is more important," concluded the speaker.

Dr. L. E. Hastings of Fort William was elected president of the Council for 1953-54.

T.R.M.

The Hon. Paul Martin, Minister of National Health and Welfare, on May 8th told the House of Commons that the addition of a **Fluoride to water supplies** was regarded as not only an important event in the history of Preventive Dentistry, but one of the most important events in the history of the whole public health field. He said that there were no disagreements among researchers that fluoridation reduces tooth decay to a marked degree.



1953

GRADUATING CLASS DENTAL HYGIENE



University
of
Toronto



R.N., R.D.M., D. Sc. in D.H. (COLUMBIA)
SUPERVISOR

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The First Class in Dental Hygiene was graduated from the Faculty of Dentistry, University of Toronto in June of this year. There were six students originally enrolled in the class and five have completed the course and received their diplomas. This is the first time in Canada that a course in Dental Hygiene has been available.

The course at the University of Toronto is of two years duration and offers the following interesting features: first to provide the dental profession with well trained auxiliary personnel to assist in the preventive aspect of practice; second, to assure the public of the benefits of such a service; and third, to give the young Canadian girl the opportunity of entering an essential profession most suited to her feminine qualities, while offering her a variety of fields of service in which she can apply her knowledge.

The first group of graduates has made use of this choice. Miss Bogart of North

Battleford Saskatchewan, has chosen the Public Health field and will be working for the provincial government in that province in a public health centre. Miss Crosson of Port Colborne Ontario, has chosen to work in Ottawa in the private office of a periodontist. Miss Jessup of Iroquois Falls, and Mrs. Graham of Toronto, are both staying in Toronto. Miss Jessup will be working for a periodontist and a general practitioner, and Mrs. Graham for an Orthodontist. Miss Findlay, also of Toronto, is remaining in Toronto and will be associated with a dentist in general practice.

Although the place of the Dental Hygienist in providing educational and preventive dental services has not been explored to any extent in Canada, there is a great demand for graduates. The next class of students on graduation will have a choice of many good positions and as the ability of these young ladies becomes better known it is hoped there will be increasing demand for the course.

QUEBEC

Dr. George Zimmermann was elected President of **The Montreal Endodontia Society** at the society's Annual Meeting held in the Queen's Hotel May 19th, 1953. The meeting presided over by the immediate past-president, Dr. J. P. Lantier, also elected the following: Vice-President, Dr. E. S. Dorion; Secretary-Treasurer, Dr. Vincent Tremblay; Hon. President, Dr. Ralph Sommer; Honorary Members, Dean D. P. Mowry, Faculty of Dentistry, McGill University, and Dean E. Charron, Faculty of Dentistry, University of Montreal.

The elections took place at the last meeting of the 1952-1953 season which took the form of an afternoon-evening meeting. The guest speaker was **Dr. M. Auerbach**, Assistant Professor of Endodontics, New York University of Dentistry whose subject was "A Practical Method of Managing Pulp Involved Teeth." A plea for sound conservative Endodontia was made by the speaker who stated that in recent years it has been found that 99% of all cases respond to conservative treatment and that only in 1% is surgical intervention necessary. He also stated that in the past the age of the patient was a most important factor to be considered before undertaking endodontic therapy, but that to-day it is realized that age is of no consequence compared to the resistance of the individual patient.

A strong plea was made by Dr. Auerbach to discount the advantages of poly-antibiotic therapy in the supposed reduction of endodontic treatment time. In a series of experiments carried out by the speaker, he found that following the opening into the root canal, 93% on culture were found to be positive. Following normal debridement, etc., a second culture was taken and it was now found that 78% were negative; this before any dressing of any type was used! He was firmly convinced that simpler dressings will duplicate the results obtained with the use of poly-antibiotics where sound endodontic procedures, including thorough debridement, are carried out. It must be remembered, however, that although it is correct to proceed to the apex of a vital tooth at the first visit, this must never be done with a putrescent pulp; normally speaking, only one-half of the canal is entered at the first visit with a dressing and a half-seal inserted, whilst at the second visit 48 hours later the apex may be approached. If this basic principle is not adhered to, an acute pericementitis will almost invariably follow.

Answering a question regarding the

treatment of an acutely involved hypersensitive tooth, Dr. Auerbach suggested relieving the occlusion and just opening into the canal at the first visit. If, however, it is impossible to carry out this procedure, then and only then, is penicillin used; 300,000 units are injected systemically and the tooth opened 24 hours later. When the tooth becomes passive, it is treated as one would a normal putrescent pulp.

Dr. Auerbach concluded his presentation by making two strong pleas toward the betterment of endodontic therapy; 1. Pulp testing is absolutely indispensable in determining which is the offending tooth in many cases; and 2. The use of cultures will reduce treatment time and cost in all cases. The speaker mentioned that two years ago he was anti-culture, but following some personal experiments to supposedly disprove the value of culturing, he became firmly convinced of its value.

Dr. Auerbach's presentation in the afternoon session was confined to the treatment of the vital tooth, and in the evening to the treatment of the non-vital case.

R.F.H.

The Fourth Annual Staff Dinner Meeting of the **Faculty of Dentistry, McGill University** was held at the Faculty Club on May 22nd. More than 65 members of the teaching staff attended the annual gathering to review the past academic year and to make suggestions for the 1953-1954 season.

Under the chairmanship of Professor W. G. Leahy, a cocktail hour and splendid steak dinner was followed by a lively discussion when many staff members (including the writer!) felt they had to let off a little steam. Prior to the informal discussions, however, Dr. Leahy presented the guest of the evening, Dr. Charles Stewart, retiring head of the department of Anaesthesia, Montreal General Hospital.

Dean D. P. Mowry followed by presenting a review of the activities of the faculty during the past year and also announced that eight dentists have been added to the staff. In the department of Prosthetic Dentistry, the Dean announced that Dr. W. Bushell, head of the department, would be in charge of Reconstruction and Ceramics; Dr. J. McCutcheon in charge of full and partial dentures; and Dr. R. T. Lamb in charge of fixed prosthesis. He also announced that Dr. Cameron Walsh for reasons of health had been forced to retire as head of the department of Pedodontia and that Dr. Craven would be his successor. The Dean closed by stating that it had

been suggested that a yearly rotation of clinical and pedagogic instructors be instituted.

Dr. A. G. Racey presented an encouraging report on the Joint Hospital Campaign for completion of the new Montreal General Hospital with particular reference to the new dental clinic for the school.

Dr. R. E. Dagg reviewed the manner of denture prosthesis teaching and discussed the many problems which had been met since the war. He made a strong plea that the instructors realize that the great majority of partial and complete dentures be made by the general practitioner and that teaching should follow this line.

In a "Criticism of Teaching," Dr. Leahy was most concerned whether the student is really obtaining an over-all picture of the patients' dental health; the student is obtaining the basic knowledge in all phases of dentistry, but is he in a position to coordinate this information and apply it when a patient presents himself. Following this thought, Dr. D. Gordon stated that teaching at the present time is riding on the crest of a wave, but that due to increased curriculum, the over-all training may be becoming more skimpy. Others taking part in the discussion were Drs. Mussells, Ambrose, Loutit, Craven, McMahon and Harvey.

R.F.H.

The Mount Royal Dental Society held its Annual Meeting on April 28th, 1953

at the Mount Royal Hotel. The Annual reports by members of the outgoing executive and committee chairmen climaxed by that of the outgoing President, Dr. D. T. Sizgal were read. All indicated that the Mt. Royal Dental Society has continued to expand numerically as well as in its activities as a professional body.

Elections were then held for the executive for the year 1953-54. The executive elected is as follows: President—Dr. R. M. Wiener; Vice-Pres.—Dr. I. B. Hyams; Secretary—Dr. S. Silver; Treasurer—Dr. A. Leith; Ass't. Secretary—Dr. M. R. Lang; General Committee—Drs. A. Colle, S. H. Feldman, A. W. Bazerman, B. Mendel, L. Lang.

The above elected executive was installed by Dr. A. S. Solomon at an installation dinner held at the Berkeley Hotel on the evening of May 13th. At this dinner, certificates of Life Membership were presented to Drs. B. Gold and M. Solomon, who have completed 35 years of active practice in the dental profession. Dr. J. Fineberg, who made the presentations, spoke of the devotion of these men to the ideals of the profession, of their unselfish service to their patients, and of their modesty.

The dinner was preceded by a cocktail party and proved to be an enjoyable evening of good fellowship. It was a fitting climax to an active year for the Society and an inspiring send-off to the new executive.

M. R. Lang.

BRITISH COMMONWEALTH NEWS

GREAT BRITAIN

The Civil Estimates for the Financial Year 1953-1954 show that payments to practitioners in general dental services are expected to total just over £28,750,000. The cost to the Exchequer is estimated at a small fraction over £22,000,000, the balance of £6,750,000 being made up by patients' payments. A comparison with the estimates for the year 1952-53 shows that gross payments to dentists are expected to be £2,500,000 less in the coming year than those estimated for a year ago. An analysis of the figures reveals that whereas the cost to the Exchequer is expected to be £1,629,500 greater than that estimated for a year ago, patients' payments are put at a fraction over £4,000,000 less than the corresponding

figure. It is probable that the earlier estimate was framed in the expectation of the introduction of the charges which were made later in the year and that the concessions made during the passage of the Act authorizing the charges resulted in the actual amount levied being considerably reduced. The present estimates, on the other hand, are presumably based on the actual experience of the effects of the charges over a period of some months in 1952, and it is of interest to note that whereas in 1952-53 payments by patients were expected to amount to approximately one-third of the gross receipts of dentists, this year those are expected to constitute only about 23.5 per cent of the corresponding gross total. — From Editorial in Br. D. Jour.

GENERAL NEWS

The Third annual meeting of the **Canadian Society of Dentistry for Children** was held in the Royal York Hotel, Toronto on Saturday, May 16th, 1953. The purpose of this Society is the advancement of knowledge of all phases of dentistry for children and the dissemination of this knowledge to the profession and to the public.

Following an address of welcome by the President, Dr. F. E. Dawe of St. Catharines, two papers were presented in the morning session. The first was presented by Dr. A. W. S. Wood, Associate in Dentistry, Dept. of Pedodontics, Faculty of Dentistry, University of Toronto, on the "Effects of Filling Material on the Dental Pulp." The other paper was delivered by Dr. J. B. Macdonald, Assistant Professor of Bacteriology and Chairman of Division of Dental Research, Faculty of Dentistry, University of Toronto, "Virus Infections in the Practice of Dentistry for Children." The luncheon meeting under the chairmanship of President-Elect Dr. E. R. W. Bilkey had as its speaker, Mr. Don Henshaw, who spoke on "Leadership." As usual, this was a most inspiring address. Dr. S. A. MacGregor was presented by Dr. Harold Swales of Toronto with an honorary life-membership in the Society. Dr. J. J. Craig of Peterboro, was chairman of the afternoon session and the guest clinician discussing "The Role of Fluoride in the Control of Dental Caries" was Phillip Jay, Professor of Dentistry, School of Dentistry, University of Michigan. A panel discussion followed with Dr. R. G. Ellis, Dean, Faculty of Dentistry, University of Toronto, acting as moderator. On this panel were, Drs. E. W. McHenry, Toronto, Dr. Gordon Cameron, Toronto, Dr. Gordon Nikiforuk, Toronto and Dr. Jay. Following this presentation, a most enlightening paper designed especially for the benefit of general practitioners was given by Dr. A. L. Posen, demonstrator in orthodontics, faculty of dentistry, University of Toronto. His subject was "The Interception and Prevention of Malocclusions." The officers elected for 1953-54 session were as follows:

Honorary President, Dr. Frank E. Dawe; President, Dr. E. R. W. Bilkey; President-Elect, Dr. Lorne Scott; Vice-President, Dr. Donald L. Rife; Secretary-Treas., Dr. D. R. Anderson; Historian, Dr. A. W. S. Wood.

Counsellors, Dr. A. V. Scrutton, Dr. M. N. Derrick, Dr. Russell McMillan, Dr. C. G. Monteith, Dr. Gordon Nikiforuk, Dr. E. G. Bilkey, Dr. G. V. Fisk, Dr. D. G.

Johnstone, Dr. William Spence, Dr. C. L. Strachan, Dr. W. Feasby, Dr. M. B. J. Keenan, Dr. E. E. Johns, Dr. M. N. Rockman.

F.D.I. Congress 1957 in Rome, Italy—

In preparation for the 1957 Congress the first meeting of the Organizing Committee of the XII International Dental Congress was held in Rome on March 19th last. In accordance with the principle of 5 yearly meetings laid down in 1900 with the foundation of the F.D.I.—it was decided at the Committee meeting that the Congress would be held in the Italian Capital in 1957. (The last took place in London last summer.)

As far as the fixing of the date is concerned the Committee, generally speaking, has attempted to coincide this international reunion as far as possible with the Colleagues' normal holiday period, that is between the end of August and the first week of September; it will probably be held in the E.42 buildings linked with the City by the underground railway which is to be inaugurated shortly.

The **Ontario Junior Red Cross Workers** have donated \$10,000.00 for a dentistry boat to travel around Newfoundland coastal areas, reported Committee Chairman, C. B. Routley, while addressing the quarterly Meeting of the Ontario Division, Canadian Red Cross Society recently in Toronto. Mr. Routley said that many Newfoundland children had never seen a dentist. A recent survey had shown that 53 out of every 100 children in the Province did not even own a toothbrush.

The **Stomatological Society of Greece** has decided to hold the first Panhellenic Congress of Dentistry in Athens on the 25th-30th of October 1953.

The Congress intends to render the Greek Dentists familiar with the latest theoretical and practical achievements of dental science and will be attended by dentists of allied countries as well. An invitation has been extended to Canadian Colleagues to attend.

Although diarrhoea, cough, rash and fever are said to be caused by **Teething**, there is no conclusive evidence nor any known "pathologic reason" for such an inter-connection. Blaming such symptoms on teething "probably is a time-

sanctioned empiric belief." Fever, rather than being caused by teething, may actually stimulate eruption! — *Queries and Minor Notes*, J.A.M.A. 148:161 (Jan. 12) 1952, per N.Y. State D. Jour.

Health Centre to Offer Course in Fluoridation:—Fluorides in water was the subject of a short course conducted May 28-29 at the Environmental Health Centre, Cincinnati, by the Centre and the Division of Dental Public Health of the USPHS.

The course covered public health aspects of fluoridation and technical information on the choice of compounds and equipment. Further information may be obtained from the specialized sanitation training section, Environmental Health Center, 1014 Broadway, Cincinnati 2.

At the recent **Congres Annual de La Societe Dentaire de Montreal**, President Ratté was made an Honorary Member. The presentation took place at a dinner given by the society in his honour.

IN MEMORIAM

John Elliot Renton of Trenton, Ontario, died May 17th, 1953, as a result of a boating accident in Trenton. Dr. Renton was born in Kingston, Ontario, and graduated from R.C.D.S., Ontario in 1922. He had practised in Trenton since that time. He was past president of both the Badminton and Golf Clubs in Trenton, as well as a member of Masonic Order. His current interest was the Trenton's Centennial Festival for which he was organizer. Dr. Renton is survived by his wife, Vivian Neal; two daughters, Diana of New York City and Mrs. Robert Burkeholder of Hamilton, and one son Michael of Trenton.

Everett Harder Simmons died Sunday, May 10th, 1953, in Calgary. A native of Trenton, Ontario, Dr. Simmons graduated from the Faculty of Dentistry, University of Toronto and practised in Trenton prior to coming to Calgary for the establishment of his own practice in 1911, and later joined the Dental Staff of the Health Department. He is survived by his wife Emma in Calgary, sons Jack of Calgary and Donald of New Westminster, B.C., and two grandchildren.

Philippe Demers died suddenly in Quebec City on Tuesday, May 19th, 1953. He was born in Montreal. He practised dentistry for many years in Verdun, Notre Dame de Grace and Quebec City. He is survived by two sons, Jacques and Guy, two daughters, Marie Paule (Mrs. Roger Gauvin) and Louyse.

Frank Gordon Sancton of Saint John, New Brunswick, aged 74, died May 28th. He was graduated with honours from Philadelphia Dental College, now Temple University, in 1908. He served as secretary and also president of the Saint John Dental Society. Doctor Sancton was a keen churchman and sportsman. He was an enthusiastic member of Saint Andrew's Curling Club. He is survived by his wife, one daughter and one grandson.

DIRECTORY

Canadian Dental Association Headquarters—234 St. George Street, Toronto, Ontario. **Matters relating to the publication of manuscripts or news items** for the English Section of the Journal should be addressed to the Editor-in-Chief, Dr. Wesley J. Dunn, 234 St. George Street, Toronto, Ont.

Matters relating to the French Section of the Journal should be addressed to the French Editor, Dr. G. de Montigny, 400 est Blvd. St. Joseph, Montreal, P.Q.

Matters relating to the business of the Journal should be addressed to the Business Manager, Dr. Don W. Gullett, 234 St. George Street, Toronto, Ontario.

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Nouvel aspect scientifique du problème de l'infection de la pulpe, du canal radiculaire et du tisse périapical

par VINCENT TREMBLAY, D.D.S., Montréal

Depuis quelques années, nous assistons à un regain d'intérêt pour cette partie de la dentisterie, appelée endodontie. Cette nouvelle orientation s'explique parce que l'extraction des dents dépulpées n'a pas donné d'amélioration aux maladies organiques, comme on l'avait espéré, et parce que le traitement du canal permet de conserver sans ennui la dent dans son alvéole. Une étude plus approfondie de la physiologie de la pulpe et du tissu périapical, appuyée sur des recherches sur la flore bactérienne et sur la découverte d'antibiotiques puissants, a rendu possible cet essor donné à la conservation des dents dévitalisées.

1. Principe du coiffage de pulpe

Le coiffage de pulpe avec l'hydroxide de Calcium s'avère un succès à certaines conditions seulement: avant d'anesthésier la dent, il faut s'assurer de sa vitalité; si le test est positif, le coiffage peut sauver la dent. De nouveaux appareils électroniques utilisés pour déterminer la vitalité de la pulpe pourront bientôt nous montrer, d'une façon des plus précises, la réaction de la dent aux stimuli électriques. L'intervention doit de plus se dérouler dans une stérilité rigoureuse, car le tissu pulpaire se contamine facilement au contact des bactéries de la bouche. Dans les cavités profondes, où la pulpe est exposée, il sera bon d'enlever d'abord toute la carie molle avant de tenter le

coiffage au Calcium; les canalicules dentinaires s'ouvrant dans une zone totalement infectée transporteront sans tarder les microbes de la carie vers la chambre pulpaire. Il peut s'être formé une couche de dentine secondaire sous la carie; dans ces cas, il est préférable de laisser "in situ" cette zone de défense, qui forme un barrière naturelle à l'invasion bactérienne. La guérison des brèches pulpaires reste toujours incertaine, car il n'est pas possible avec les moyens dont dispose aujourd'hui le dentiste de savoir si la pulpe n'a pas déjà été atteinte par les bactéries avant de la coiffer. Cependant, avec tous les tests, on y parvient de très près. Notre premier rôle, comme dentiste, est de sauvegarder l'organe de la pulpe, et de le garder physiologiquement vivant aussi souvent que cela est possible. C'est pourquoi nos premiers efforts doivent être tentés vers le coiffage. Il faut examiner périodiquement la dent qui a subi un coiffage, en y faisant des tests électriques; la dent doit demeurer vivante. Le seul fait que la dent est indolore ne constitue pas un critère suffisant; une pulpe dégénère parfois lentement sans donner de symptômes.

2. Principes du traitement conservateur

Si l'organe de la pulpe a été envahi par les bactéries et si sa physiologie normale a été modifiée, le coiffage s'avère

un insuccès. Il faut alors sacrifier la pulpe pour épargner la dent. La pulpe a joué un grand rôle dans l'élaboration de la dent et dans la formation de dentine secondaire; chez l'adulte, elle a une fonction de moindre importance. La membrane périodentaire assure la rétention de l'organe et ses échanges avec les tissus environnants. La dent peut donc être conservée en tout sûreté si les principes de base de l'endodontie sont bien appliqués. Ces principes s'appuient sur les données les plus modernes de l'histologie, de la physiologie, de la bactériologie et de la pharmacologie.

Par traitement conservateur en endodontie, on entend le traitement de canal et l'obturation du canal sans intervention chirurgicale. Il est possible de traiter une grande quantité de dents dont la pulpe et même une partie du tissu apical ont été infectées. Lorsque l'infection de la pulpe et du canal radiculaire se limite à l'apex, il est facile après un traitement mécanique et une médication appropriée d'obtenir un canal stérile et de l'obturer avec une substance qui prévient la réinfection. Dans un cas plus avancé, quand l'infection ou l'irritation dépasse la limite de l'apex et a donné des manifestations dans le tissu apical, plusieurs facteurs entrent en jeu. Si nous sommes en présence d'une grande quantité de tissus infectés, chez un patient dont la résistance est faible, les symptômes de l'abcès aigu apparaissent tout de suite avec toutes leurs répercussions générales. Si l'infection provient de bacilles peu virulents chez un individu en pleine vigueur phy-

sique, elle donnera un granulôme ou un abcès chronique fistulé. Dans ce dernier cas, il y aura formation d'un kyste, si des débris épithéliaux se trouvent dans la zone infectée.

Sauf dans les cas où l'apex est entouré d'une zone encapsulée, il est permis de croire que le traitement de canal suffira à éliminer l'épanchement ultrapical. Ce principe s'applique surtout quand la circulation est normale et le patient en parfaite santé. Un exemple, qui corrobore cette assertion, est celui d'un kyste traumatique non encapsulé: la radiographie montre sans l'ombre d'un doute une raréfaction apicale (fig. 1), séquelle de traumatisme; la pulpe s'est putréfiée et une toxine appelée nécrosine, a provoqué un déplacement du calcium de la trame osseuse apicale. Pas une bactérie n'est entrée en ligne de compte parce qu'il n'y a aucune issue exogène. En enlevant la cause, c'est-à-dire en traitant le canal, ce tissu osseux nullement infecté s'est recalcifié (fig. 2). Le canal ne renferme qu'un exudat contenant des débris cellulaires. Ces zones de stagnation peuvent, par la suite, s'infecter secondairement, par voie endogène ou exogène.



fig. 1

KYSTE TRAUMATIQUE: chez une jeune patiente, après un choc dans la région des incisives inférieures. Décalcification de la région apicale. L'exudat du canal est stérile. Canaux obturés et dents ligaturées pour consolidation.

3. L'abandon des pâtes momifiantes

La momification pulpaire encore pratiquée en Europe n'est plus en vogue aux Etats-Unis. Cette méthode a été sup-

COIFFAGE DE PULPE

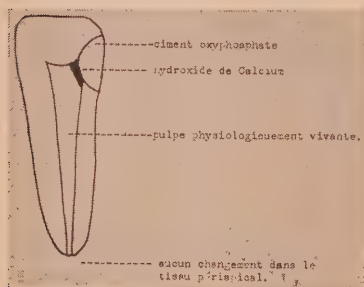
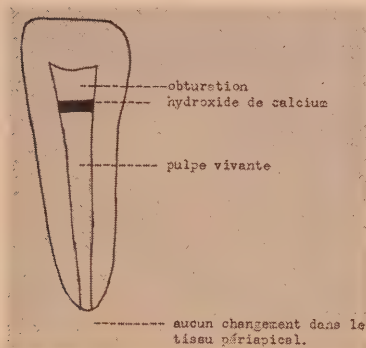




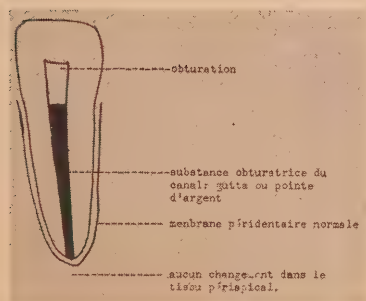
fig. 2

Après un mois: ligature enlevée, dents consolidées, et région apicale en grande partie régénérée. Les deux dents adjacentes sont vivantes. Aucune chirurgie n'a été nécessaire.

PULPOTOMIE



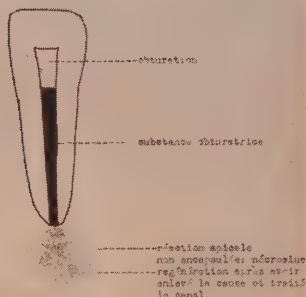
PULPECTOMIE



plantée par les procédés d'extirpation de la pulpe en employant des méthodes et

KYSTE TRAUMATIQUE

(fig. 1 et 2.)



une technique aseptique et un remplissage parfait du canal. Le Council on Dental Therapeutics de l'American Dental Association, dans une lettre datée de janvier 1952, mentionne ce qui suit au sujet d'une préparation commerciale appelée POSTOLENE. "Un échantillon de ce produit a été acheté sur le marché; il consiste en une pâte jaune pâle, épaisse, contenue dans un récipient d'une demi-once. Sa formule qualitative est la suivante: oxyde de zinc, iodoforme, créosote, sulfate de baryum, cassia et huile de clou, phénol et lanoline. Selon les manufacturiers, POSTOLENE est un produit antiseptique destiné au coiffage des pulpes, au remplissage définitif des canaux et au traitement des dents absédées; il est aussi recommandé pour le mal de dent. Le Council n'a pas de renseignement sur l'efficacité et la sécurité de ce produit. Par conséquent, le Council ne peut accepter cette préparation."

Un autre produit commercial, le PUTRIDOMORS, a fait l'objet d'une enquête de la part du Council on Dental Therapeutics; cet organisme s'adresse aux manufacturiers de ce médicament pour en connaître la formule. Ceux-ci refusent d'en divulguer la composition: c'est donc une préparation secrète! Sur un pamphlet accompagnant le produit, il est écrit: "PUTRIDOMORS is indicated for saving septic teeth, for the treatment of fistulas, for the treatment of granulo-

mas." Il renferme la traduction d'un article de "L'Odontologie, Paris" (Vol. LXXII, no 1, janvier 1934) écrit par le découvreur, le Dr J. Wohlgemuch. Cet article ne supporte pas la critique scientifique.

Des échantillons des deux produits mentionnés ci-haut ont été analysés à la Faculté de Pharmacie de l'Université de Montréal; leurs agents actifs sont la formaldéhyde, le phénol et la créosote. Les autres constituants ont une importance secondaire. La lecture de la littérature publicitaire de ces préparations momifiantes révèle l'importance primordiale qu'on met à "ne pas mettre en mouvement les masses gangréneuses," et la difficulté d'atteindre les canaux.

Grossman dans une lettre écrite en décembre 1951, déclare: "So far as I can see pulp mummification is ordinarily used in such cases where pulpotomy can be used, that is in an uninfected vital pulp. Under the circumstances, since in pulpotomy the pulp remains vital, which is advantageous, I can see no reasons for destroying the pulp and then preserving it. Certainly a vital pulp is better than a non vital pulp." Les pâtes momifiantes ont donc été complètement abandonnées pour plusieurs raisons.

1. Dans les cas de pulpe non infectée, il vaut mieux la garder vivante que de la momifier.

2. Dans les cas de pulpe infectée, il vaut mieux enlever tous les débris organiques infectés dans le canal, le stériliser et ensuite l'obturer hermétiquement, que de laisser des débris infectés dans le canal. Si on laisse de tels débris dans le canal, il se formera une zone de défense de l'organisme sous forme de granulôme ou kyste apical.

3. Les agents utilisés, formaldéhyde et créosote, sont caustiques et endommagent les cellules vivantes.

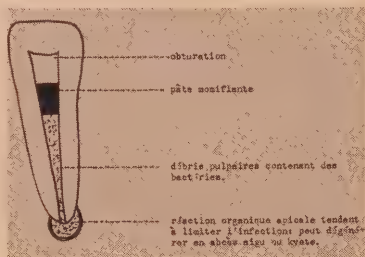
4. Dans des dents qui sont atteintes de grandes lésions apicales, telles des infections chroniques non fistulisées ou fistulisées, des kystes, etc., il faut absolument curetter ces formations après avoir traité le canal. Il se fera ensuite une réorgani-

sation du caillot sanguin, suivie d'une guérison parfaite. L'emploi des pâtes momifiantes dans le canal, sans chirurgie, est futile et ne change en rien l'état présent; les pâtes risquent d'aggraver la situation en changeant l'équilibre instable de telles conditions.

5. De plus, ces préparations décolorent la dent parce qu'ils laissent des débris organiques pulpaire qui se décomposent.

H. Lentulo de Paris écrit: "Les lésions apicales concernent toujours des canaux vides ou incomplètement obturés. L'obturation mécanique du canal est plus importante que la part qui revient au médicament." Le docteur Albert, de New-York, prétend que "ce qui compte, ce n'est pas ce qu'on met dans le canal, mais c'est ce qu'on y enlève." A. Chaput nous dit dans la revue de la Stomatologie: "La méthode de la momification, malgré son apparente facilité, ne nous paraît pas bonne: elle présente de multiples risques d'échecs qui en limitent le champ d'opération."

MOMIFICATION



4. Médication nouvelle des canaux

1. Paramonochlorophénol camphré: c'est un médicament qui agit contre toutes les bactéries trouvées dans les canaux, les levures y compris. Il est très bien toléré et ne développe pas de résistance.

2. La pâte P.B.S.C. de Grossman agit contre une grande variété de bactéries trouvées dans les canaux, les gram positifs, les gram négatifs et les levures.

C'est un des agents les plus effectifs qu'on ait trouvé à date.

3. Un mélange de pénicilline et de streptomycine et d'un antihistaminique: agit contre les gram négatifs et les gram positifs et prévient l'irritation par l'action de l'antihistaminique. Cependant on trouve des cas de bactério-résistance.

4. La terramycine agit contre une grande variété de bactéries, mais il est trop tôt pour juger réellement son action contre la flore des canaux.

5. L'érythromycine, médication très effective dans certaines occasions, a une action limitée dans les canaux.

5. Importance de la préparation mécanique du canal

Les canaux sont traités avec tous les agents antibiotiques que nous fournissons les découvertes modernes; mais en dépit de cela, la préparation mécanique du canal et l'enlèvement des débris reste une opération de première importance. Inutile de vouloir stériliser un canal qui n'a pas été bien nettoyé jusqu'à l'apex.

6. Elargissement du canal

Ici, il y a un principe mécanique en jeu qui a une grande répercussion au point de vue physiologique. Il faut ouvrir le canal, de façon à pouvoir l'obturer hermétiquement. Pour les dents postérieures à canaux très fins, nous avons des pointes d'argent calibrées de façon à fermer les canaux comme un piston. Pour les antérieures nous utilisons des pointes de gutta-percha, mais encore là la préparation et l'élargissement du canal permettra de l'obturer parfaitement. Il faut condenser avec force la substance obturatrice de façon à fermer hermétiquement cet "espace vide" qu'est le canal et obtenir, si l'on peut, "un inlay à l'apex" par son adaptation. Sans la mise en oeuvre de ces principes de base du traitement de canal, nous aurons une stagnation des exudats apicaux dans ce tube ouvert; de là à la réinfection, il n'y a qu'un pas. A la rigueur, l'organisme peut se charger d'un peu de tissu infecté à l'apex parce que là existe une irrigation par le



FIG. 3

pulpe exposée par la carie: grande zone de raréfaction apicale non encapsulée.

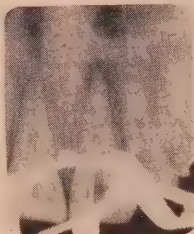


FIG. 4

mesure du canal; la zone apicale infectée a diminué de volume après un traitement au P.B.S.C.



FIG 5

Obturation complète du canal après sa stérilisation. zone apicale presque entièrement disparue après trois semaines seulement.

courant sanguin et une affluence de leucocytes ou de phagocytes, dans le canal, avec la construction apicale on ne peut espérer la même défense.

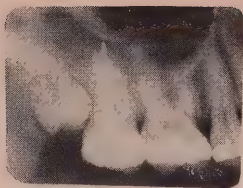
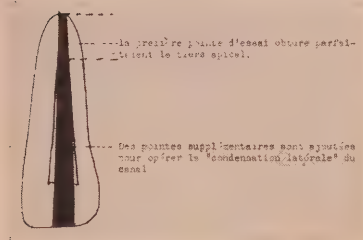


FIG. 6

traitement de canal sur molaire: pointes d'argent. Patiente de 20 ans, dent de sagesse en évolution.

OBTURATION MECANIQUE



7. Principe du traitement chirurgical

Lorsqu'on est en présence d'une zone apicale encapsulée et qu'on ne peut espérer sa disparition par le seul traitement de canal, il vaut mieux dans ces cas utiliser la chirurgie. Ce traitement consiste d'abord à traiter les canaux de la dent. Il est plus important de traiter les canaux et de les obturer parfaitement que de faire la chirurgie apicale. Il est inutile de curetter un tissu de granulation ou une zone infectée, si on n'a pas stérilisé et fermé hermétiquement le canal. Si le canal n'est pas parfaitement scellé, il y aura récurrence de l'infection. Et ceci confirme le principe qui s'applique dans le traitement conservateur, qui est celui du scellement hermétique du canal.

Après l'application de ces principes, on peut espérer une guérison parfaite; le caillot sanguin va se réorganiser en fibroblastes et ensuite en ostéoblastes. Cette régénération sera visible sur une radiographie de 6 à 18 mois après l'in-

CURETTAGE CHIRURGICAL

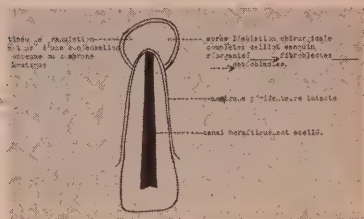


FIG. 7

abcès chronique fistulisé sur une première prémolaire supérieure à la suite d'une obturation profonde.

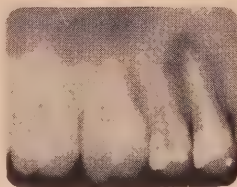


FIG. 8

Canaux obturés, curettage apical et polissage des apex. Radiographie immédiatement après l'intervention.

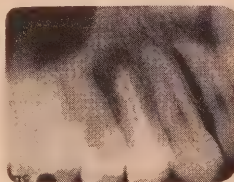


FIG. 9

Radiographie quelques mois plus tard montrant la réorganisation des trabécules osseuses à l'apex, signe de guérison.



FIG. 10 (en ordre de gauche à droite)

No. 1. Paramonochlorophenol camphré: médicament non irritant à action de longue durée, employé dans les canaux fins à cause de son état liquide.

No. 2. P.B.S.C. suspension de Grossman, traitement polyanthibiotique: employé dans les canaux larges à cause de sa consistance visqueuse, et dans les réactions apicales bénignes non encapsulées.

No. 3. Terramycin; sans forme de pâte à l'état d'essai.

No. 4. La combinaison Pénicilline-Streptomycine-Antihistamine: Action plus limitée, et l'histamine combat l'irritation.

No. 5. Wydase: Pour réduire l'inflammation post-opératoire et l'enflure.

Non employée dans les cas d'abcès aigu.

intervention chirurgicale. Nous avons également la preuve histologique de la guérison parfaite de la zone opérée.

Conclusions

L'endodontie se propose de garder l'organe de la dent non seulement d'une façon tolérable pour le patient mais aussi d'une façon tout à fait sûre. La mise en oeuvre de principes de base et l'application des données les plus modernes au point de vue thérapeutique au sujet de la stérilisation et de la fermeture des ca-

naux radiculaires permet d'avoir un tissu apical tout à fait physiologique. L'emploi de nouveaux médicaments facilite la stérilisation de la flore très complexe des canaux infectés. La méthode de momification, malgré son apparente facilité, présente de multiples risques d'échecs. A la suite de l'ablation chirurgicale d'un tissu encapsulé à l'apex, on obtient une régénération des cellules osseuses et un retour à la physiologie normale de la zone apicale.

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Discours du Président de la Société Dentaire de Montréal*

par ROGER CHARETTE, D.D.S., Montréal

Il y a un peu moins d'un an, au mois de juin 1952, l'Association Dentaire Canadienne fêtait son 50ième anniversaire de fondation au cours de son congrès annuel à Vancouver, à 3000 milles de Montréal.

A ce congrès, qui fut à ce qu'on rapporte un éclatant succès, toutes les parties du Canada étaient représentées. Mais il va sans dire, la plupart des dentistes de l'est du pays n'avait pu se rendre aussi loin pour y assister. Cependant, il nous semble qu'à ce temps-là, tous, nous communions avec les congressistes de là-bas à la joie de voir célébrer dignement les noces d'or de notre Association.

En effet, il y a cinquante ans, notre profession s'organisait en Association sur une base nationale afin de mieux se diriger vers l'avancement, le perfectionnement, l'unité. Et aujourd'hui nous pouvons dire qu'elle a très bien réussi.

Mesdames, Messieurs, je ne voudrais pas tenter d'énumérer, ici, tous les progrès dans le domaine scientifique ou technique accomplis par notre profession, au Canada, sous l'égide de son Association nationale et sous l'impulsion de nos cinq facultés dentaires canadiennes.

Je sais qu'un auditoire comme celui-ci est trop bien renseigné sur ces faits pour s'étendre longuement sur le sujet. Mais il est un aspect que je voudrais pendant quelques instants faire ressortir, c'est celui de l'unité au sein de notre profession.

Je crois en effet pouvoir affirmer, et je le fais avec beaucoup de fierté, que, chez nous les dentistes, l'unité à travers tout le Canada est un fait accompli et que les obstacles isolés qui pourraient encore subsister ne sauraient plus nous empêcher de marcher à l'unisson vers notre idéal pour le bien de la société en général.

Nos amis de langue anglaise me pardonneront, j'en suis sûr, et je connais

assez bien ceux qui sont ici, ce soir, pour croire qu'ils m'encourageraient même à le faire, de souligner le rôle que nos représentants canadiens-français ont joué au sein de l'Association Dentaire Canadienne, dans la réalisation de cette unité.

D'ailleurs nous reconnaissons, et ils le savent bien, que ce qu'ont pu faire les nôtres, c'est grâce à leur compréhension, à leur coopération, et à leur désir de faire leur devoir.

Et, pour ce faire, je ne voudrais que mentionner les noms de quelques artisans que ma carrière professionnelle encore relativement jeune m'a permis de connaître et d'apprécier. Et je nomme le Dr. Eudore Dubeau, qui fut un des fondateurs de l'Association, son premier secrétaire et plus tard président; le regretté docteur Joseph Nolin, ancien président; le docteur Philippe Hamel, de Québec, aussi ancien président; le docteur Alcide Thibaudeau, maintenant décédé, les docteurs Ernest Charron, Paul Geoffrion, Armand Fortier, Conrad Archambault, Gérard deMontigny et plusieurs autres, peut-être parmi les plus méritants, dont les noms ne se présentent pas à ma mémoire.

Ces gens sont des confrères qui n'ont pas ménagé leurs efforts pour rencontrer nos amis anglophones, nous faire connaître, nous faire comprendre, et nous leur en savons gré.

Et, Mesdames et Messieurs, nous pouvons voir aujourd'hui combien ils ont réussi dans le domaine de l'entente cordiale, puisque nous avons devant nous le docteur Ratté, un canadien-français, élu l'an dernier lors du jubilé d'or, pour présider aux destinées de notre Association nationale, qui groupe 5000 confrères et où la majorité anglophone est de 4 pour 1.

D'ailleurs, quelques mois plus tard, qu'elle heureuse coïncidence, nous rendions la courtoisie à nos confrères de langue anglaise, en plaçant à la tête du

*prononcé à l'occasion de la remise d'un diplôme de membre honoraire au docteur Gustave Ratté, président de l'A.D.C. au cours du dîner annuel du Président tenu durant le Congrès annuel de la Société Dentaire de Montréal, le 6 mai 1953.

Collège des Chirurgiens-Dentistes de la Province de Québec un homme de leur langue, notre sympathique et dévoué président, le docteur Johnston Abraham.

Ce qui prouve encore une fois que dans notre profession celui qui a su démontrer le dévouement nécessaire à la cause commune et les qualités requises de chef, peut occuper les postes de commande quelque soient son ascendance et sa langue maternelle.

En effet, Mesdames et Messieurs, si nous avons la fierté de voir un des nôtres à la tête de l'Association Dentaire Canadienne, ce n'est pas qu'il ait accédé à une charge aussi lourde et aussi pleine de responsabilités par pure sympathie. C'est plutôt parce que le Dr Ratté, que nous voulons honorer ici ce soir a su démontrer par son esprit de travail, par son altruisme et par son enthousiasme, qu'il était parfaitement qualifié pour remplir ce rôle de première importance.

Nous savons, Dr Ratté, combien vous avez su vous dépenser, et avec combien d'adresse vous avez su vous attacher des collaborateurs, avant et depuis que vous avez accédé à votre poste, et je voudrais ici rendre hommage à une personne qui a su tellement bien vous soutenir dans vos succès et aussi sans doute dans les moments de lassitude que n'avez certes pas manqué d'éprouver à certains moments. Je veux dire Madame Ratté, c'est-à-dire celle qui a dû combien de fois, rester seule au foyer lors de vos nombreux voyages à travers le pays, pendant que vous alliez servir la profession; Celle aussi qu'à plusieurs reprises nous avons eu le plaisir de voir avec sa grâce enjouée et son entrain, compléter en quelque sorte votre œuvre de rapprochement entre les confrères.

Nous pourrions parler longuement sur les mérites, sur la sincérité, et sur les œuvres professionnelles, sociales et philanthropiques de notre président, mais beaucoup d'entre vous connaissent mieux que moi le Dr Ratté, Gus, pour ses nombreux amis.

Je me contenterai, pour le bénéfice des plus jeunes de tirer à grands traits une esquisse de sa biographie. Le Dr Gustave Ratté est né à St-Augustin, comté de

Portneuf, en 1903. Décidément, c'est un homme de l'âge d'or, puisque pendant son terme, il aura présidé au jubilé d'or de l'Association Dentaire Canadienne, aura atteint son propre cinquantenaire, et l'automne prochain lors du congrès national qui aura lieu à Montréal même, il sera le principal témoin des manifestations qui marqueront le commencement de la cinquantième année de l'enseignement de la Chirurgie Dentaire à notre faculté de l'Université de Montréal.

Après avoir fréquenté l'Académie Commerciale de son village natal, le Dr Ratté se dirigea vers le Collège de Lévis où il obtint son baccalauréat "es art" avant d'entrer à la faculté de Chirurgie Dentaire de l'Université de Montréal, où déjà commençait à poindre son talent d'organisateur, puisqu'il était élu président des étudiants de Chirurgie Dentaire. Après l'obtention de son doctorat en Chirurgie Dentaire, le Dr Ratté continua à s'intéresser activement aux sociétés dentaires et scientifiques. Membre de la Société de Stomatologie de Québec depuis 1929, il en fut le président en 1936-37. Il est aussi membre de la Société des Médecins et Dentistes de la Rive-Sud; membre depuis 1925 de la Société Provencher d'Histoire Naturelle, il en fut le président en 1933 et son secrétaire pendant plusieurs années; il siège régulièrement au Bureau des Gouverneurs du Collège des Chirurgiens-Dentistes de la Province de Québec depuis 1934 et fait partie du comité des assesseurs depuis 1940.

Plusieurs gardent un souvenir enchanté de la fameuse réunion de la Malbaie en 1948 alors qu'il était président du comité du congrès au sein de l'A.D.C.

Enfin, il y a quelque temps, il était nommé Fellow of the American College of Dentists.

Pour tous ces services distingués, rendus si généreusement à la cause de la science, de la profession et de la population, notre Société est heureuse de vous donner une preuve tangible de son admiration et j'ai le bonheur, Dr Ratté, de vous présenter au nom de tous ses membres un certificat de membre honoraire de la Société Dentaire de Montréal.

Nouvelles des Sociétés

Société Dentaire de Montréal

Mercredi, le 6 mai, s'ouvrait en l'Hôtel Windsor, à Montréal, le Congrès annuel de la Société Dentaire de Montréal.

Les assistants, faisant preuve de belle collaboration, s'inscrivirent tôt, avec ce résultat que le programme se déroula tel que préparé.

L'avant-midi fut consacré aux films scientifiques, tandis que dans l'après-midi, en session générale, le Dr Robert De Plaen, D.D.S., attaché au service dentaire de l'Hôpital du Sacré-Cœur, de Cartierville, et du Mont-Sainte-Anne de Lachine, présenta un travail intitulé "Observations dentaires chez les tuberculeux." Après avoir donné une description générale de cette maladie, le conférencier s'attarda plus longuement sur les muqueuses buccales, la calcification de l'os, la susceptibilité à la carie, etc.

Vinrent ensuite les cliniques de table. Il serait trop long d'énumérer ici tous les sujets qui y furent traités, mais qu'il suffise de dire que l'intérêt suscité chez tous les assistants et l'ordre absolu qui y régnait en ont fait un succès complet.

Durant ce temps, les épouses des dentistes étaient conviées à un vin d'honneur par Mad. Roger Charette, épouse du président de la Société.

La journée se termina par le dîner annuel du président de la Société Dentaire de Montréal. Plusieurs allocutions y furent prononcées où l'humour et le sérieux faisaient bon voisinage. Le Dr Charette décerna au Dr Gustave Ratté, de Québec, président de l'Association Dentaire Canadienne, un diplôme d'honneur au nom de la Société.

La deuxième journée fut, comme la première, très bien remplie. Dès 9.30 hrs, débutèrent les cliniques répétées. Le docteur Paul Dionne, de Joliette, traita de "Bridgework sur dents vivantes." Avec clarté de précision, il parla des indications et des contre-indications, des aspects mécaniques et physiologiques, de rétention et des avantages de la préparation dite "slice." Le tout fut complété par

des modèles et des projections sur l'écran.

Le docteur Gérald Ste-Marie, D.D.S., de Springfield, ex-interne du Grave Hospital de Detroit, et attaché au service de prothèse au Tuft's Dental School, Boston, traita de la méthode de Hardy en prothèse complète. Le conférencier donna la technique complète pour la confection de pièces de prothèse à contours individualisés en utilisant des dents non anatomiques. Toutes les différentes phases pour les cas normaux comme anormaux furent expliquées en détail et illustrées par de nombreux modèles.

M. W. T. Sweeney, de Washington, attaché au Dental Research Laboratory, National Bureau of Standards, U.S. Department of Commerce, présenta un travail sur l'état actuel des résines en dentisterie et ce qu'on peut en attendre. Selon M. Sweeney, les travaux de recherches actuellement en cours permettent d'entrevoir de meilleurs résultats que ceux qu'obtient actuellement le dentiste avec les résines.

La clinique continue du docteur Jacques Demers, "Méthode simplifiée de prise d'empreintes pour incrustations et attaches de ponts à l'aide des hydrocolloïdes" s'adressait à ceux qui s'étaient spécialement inscrits pour cette clinique. Le but que se proposait le Docteur Demers, et il l'a atteint, était de permettre à ceux qui suivaient sa clinique de pouvoir se servir facilement de cette méthode à leur bureau.

En session générale, le Docteur Roger Dufresne, M.D., chef-adjoint du Service de Médecine de l'Hôpital Notre-Dame, traita des problèmes d'ordre médical qui confrontent le dentiste et de la collaboration qui doit s'en suivre entre le médecin et le dentiste.

Lors du dîner offert par la compagnie Charles E. Frosst, le conférencier, le docteur Nicolas Eouagnignon, M.D., du Dahomey en Afrique occidentale française, présenta une conférence aussi intéressante qu'amusante destinée à nous faire connaître les Africains tels qu'ils sont.

Dans l'après-midi, le docteur H. K. Brown, d'Ottawa, présenta, en session générale, les plus récentes données scientifiques sur la fluoruration des eaux au Canada. Cette communication fut des plus suivies à cause du grand intérêt qu'elle présente actuellement pour différentes villes, dont Montréal.

Le programme féminin soulevait autant d'intérêt que le programme scientifique. En effet, une grande parfumerie présentait une conférence exposée par une monitrice expérimentée sur les secrets du maquillage, suivie d'un thé. Le vendredi, 8 mai, marquait la fin de ce Congrès.

Les cliniques répétées et la clinique

continue furent suivies d'une session générale. Le docteur Irving Glickman, B.S., D.M.D., F.A.C.D., du Tuft's College de Boston, parla du traitement local des troubles gingivaux, tandis que dans l'après-midi, il analysa l'influence des facteurs locaux de l'os dans l'évolution, le diagnostic et le pronostic des problèmes gingivaux.

Suivirent un forum et l'assemblée annuelle des membres de la Société Dentaire de Montréal, au cours de laquelle eurent lieu les élections des membres de l'Exécutif.

Le Congrès se termina par un coquetel et un buffet-dansant patroné par différentes firmes dentaires.



**Photo prise à l'ouverture du Congrès annuel de la
Société Dentaire de Montréal, le 6 mai 1953**

Première rangée, de g. à d.: Louis Lépine, directeur du Congrès; J. W. Abraham, président du Collège des Chirurgiens-Dentistes de la Province de Québec; Roger Charette, président de la Société Dentaire de Montréal; Gustave Ratté, président de l'Association Dentaire Canadienne; Ernest Charron, doyen de la Faculté de chirurgie dentaire de l'Université de Montréal;

Deuxième rangé, de g. à d.: Vincent Tremblay, Roland Gendron, Gilles Baril, Léon Carpentier, Eugène Lussier, Jean Mignault, Fernand Lalonde, C.-Auguste Durand, Jacques Demers, Don W. Gullett, secrétaire de l'A.D.C., Guy Langelier.

Congrès de l'Association Dentaire Canadienne

à Montréal, les 19, 20, 21, 22 octobre 1953

organisé par le Montreal Dental Club

*Célébration du cinquantenaire de la fondation de la
Faculté de chirurgie dentaire de l'Université de Montréal.*



Durant la réunion, mardi après-midi, de 2.30 à 4.30 hrs, tous les congressistes seront transportés dans les locaux de la Faculté de chirurgie dentaire, sur le Mont-Royal, où un programme scientifique d'envergure a été préparé à leur intention.

Tous les diplômés de l'Université de Montréal sont cordialement invités à revenir à leur Alma Mater; les professeurs anciens et nouveaux les y attendent!

On peut s'inscrire à l'avance au Congrès, en écrivant au Dr. D. B. Ward, suite 309, 1414, rue Drummond, Montréal.

Prix de l'inscription: \$15.00

Congrès de l'Association Dentaire Canadienne

Programme des cliniques et des démonstrations
présentées à l'Université de Montréal

le 20 octobre 1953

Section No 1: Diagnostic

Clinique de table

- 1) Fontaine, Jean—"Lésions des tissus mous de la cavité buccale"
- 2) L'Archevêque, Adolphe—"Admission des patients; dossiers; organisation générale des cliniques"
- 3) Pelletier, Georges—"Plans de traitements"

Section No 2: Prothèse

Cliniques au fauteuil

- 4) Dubé, Victorien—"Empreintes pour rebasage"
- 5) Lussier, Eugène—"Montage sur articulateur anatomique"
- 6) Nadeau, Jean—"Prise d'empreintes"
- 7) Nadeau, Jean—"Cas inédit de prothèse"

Cliniques de table

- 8) Brouillet, Henri—"Dessin et coulée des plaques partielles"
- 9) de Montigny, Gérard—"Obturbateurs"
- 10) Patenaude, Camille—"Réfaction de prothèse complète avec la technique Hanan-Hooper Duplicator"

Section No 3: Anatomie et histologie dentaires

- 11) Bussièrès, Julien—"Histologie dentaire"
- 12) Gauthier, Gustave—"Dissection dentaire"
- 13) Pelletier, Robert—"Dessins anatomiques"

Section No 4: Sciences fondamentales et recherches

Cliniques de table

- 14) Leblond, C. F.—"L'élaboration de la dent étudiée avec les isotopes"
- 15) Wainwright, W. W.—"Radiologie et radiobiologie dentaires"
- 16) Trout, E. D.—"L'intensité de la radiation secondaire émanant de l'appareil dentaire"
- 17) Tabern, D. L.—"La préparation et l'application des substances radioactives pour la thérapeutique et la recherche"
- 18) Lachapelle, Jean-Paul—"Matière médicale"

Section No 5: Orthodontie

Cliniques au fauteuil

- 19) Kennedy, Duncan—"Traitement de certaines malocclusions au moyen de l'appareil modifié de Crozat"
- 20) Oliver, Austin—"Traitement de la labioversion au moyen d'une plaque en acrylique"
- 21) Oliver, Howard—"Prise de radiographie du crâne au moyen du Céphalostat de Marjolis"

Clinique de table

- 22) Beauséjour, Guy—"Le traitement des linguo-versions des incisives dans les cas de classe 1"
- 23) Bengt, Otto—"La fabrication des appareils de maintien au moyen de couronnes en acier inoxydable"
- 24) Geoffrion, Paul—"Correction des habitudes vicieuses par la persuasion"

Section No 6: Anesthésie et chirurgie buccales

Cliniques au fauteuil

- 25) Sénécal, J. Armand—"Techniques d'extraction des dents incluses"

Cliniques de table

- 26) Clermont, Moïse—"Anesthésie au protoxyde d'azote"
- 27) de Montigny, Gérard—"Extraction chirurgicale"
- 28) Genest, Armand—"Correction chirurgicale des crêtes inférieures résorbées"
- 29) Madore, Claude—"Points de repère anatomiques pour l'anesthésie locale"
- 30) Raymond, Antoine—"Dissection de la tête"

Section No 7: Radiologie et photographie

Exposition

- 31) Fontaine, Jean—"Radiographies"

Cliniques au fauteuil

- 32) Fontaine, Jean—"La technique Updegrave pour les radiographies de l'articulation temporo-mandibulaire"

Section No 8: Dentisterie opératoire

Cliniques de table

- 33) Baril, Gilles—"Galvanoplastie pour incrustations"
 34) Deschênes, Hervé—"Techniques pour la manipulation de l'or en dentisterie opératoire"
 35) Génier, Percy—"Techniques de la digue"
 36) Olivier, Jacques—"Les silicates et les acryliques en dentisterie restaurative"
 37) Renaud, J. Arthur—"Le coiffage des pulpes"
 38) Yergeau, Jean—"L'emploi de l'amalgame, préparation des cavités, trituration de l'amalgame, insertion"

Section No 9: Endodontie

Cliniques de table

- 39) Allaire, Gilles—"Vitalomètres"
 40) Cardin, François—"Instrumentation"
 41) Poirier, Guy—"Médication"
Projections
 42) Bélisle, P.-Emile—"Blanchiment des dents dévitalisées"
 43) Tremblay, Vincent—"Histoires de cas en endodontie"

Section No 10: Pédiodontie

Cliniques au fauteuil

- 44) Charpentier, J. Lane—"Application topique des fluorures"

Cliniques de table

- 45) Benoit, Guy—"Appareils de maintien"
 46) Leblanc, Adélar—"Traitement des pulpes des dents temporaires"

Section No 11: Périodontie

Cliniques au fauteuil

- 47) Charpentier, J. Lane—"Curettage sub-gingival"
 48) Gendron, Roland—"Gingivectomie et opération du lambeau"
 49) Pelletier, Georges—"Equilibration d'occlusion"

Section No 12: Couronnes et ponts

Cliniques de table

- 50) Charette, Roger—"L'emploi des hydrocolloïdes en couronnes et ponts"
 51) Robichaud, Médéric—"Couronnes et ponts"
 52) Trottier, Jean-Paul—"Attaches de ponts"

Pellicules cinématographiques

- 1) "Empreintes physiologiques en prothèse complète", par Jean Nadeau.
 2) "Prise d'empreintes au moyen du Gnostotat", par Paul Geoffrin et Gabriel Lord.
 3) "Prise d'empreinte pour le masque facial", par Paul Geoffrin.
 4) "Cas d'anodontie totale", par Paul Geoffrin.
 5) "Habitudes vicieuses des enfants et leurs conséquences", par Onil Hébert.
 6) "Anatomie, pathologie de l'articulation temporo-mandibulaire; traitement par injection sclérosante", par Harry M. Seldin; commenté par Sydney Hornstein.
 7) "Amalgame dentaire", commenté par Guy Lapointe.
 8) "Technique de l'Aident", commenté par Gustave Dupras.



Pyramid Mt. from Lac Beauvert
Jasper National Park, Alberta, Canada

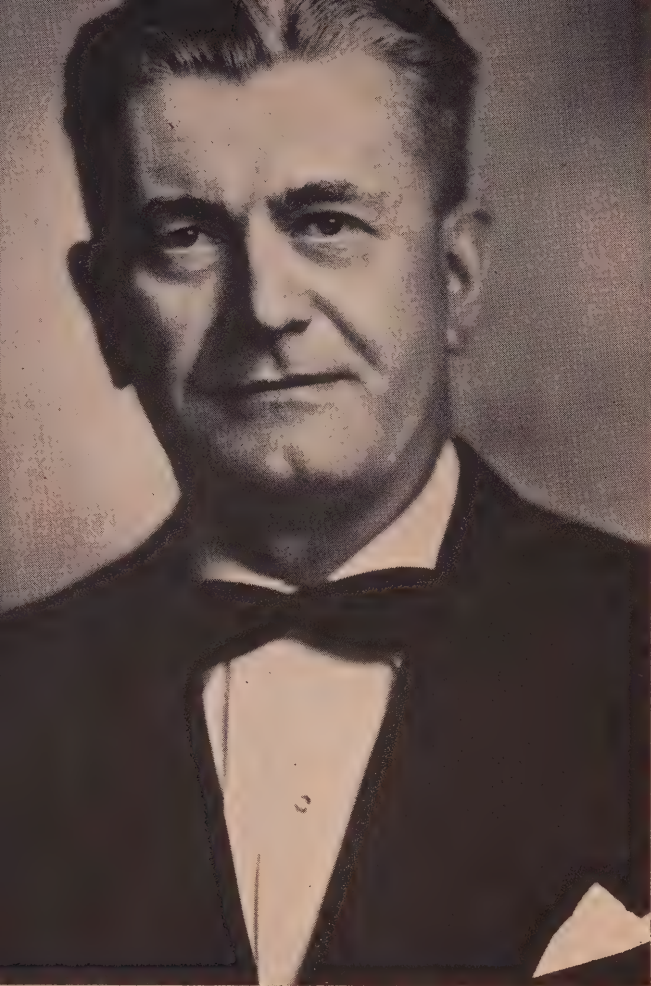
Art Exhibit at the Canadian Dental Association Meeting in Montreal

FOLLOWING the custom of the past three years, the Canadian Dental Association will display work of artistic merit done purely for pleasure by its members. It is suggested that groups in various centres might pack their entries together, marking the title and producer's name and address clearly on the back of each item and enclosing a small card with title and name for display in the case of paintings or sculpture or a title and signature on the mount in the case of photographs. Items should be shipped to arrive in Montreal a week before the meeting otherwise it may not be possible to display them properly. Antoine's Art Gallery has arranged to receive all exhibits, hang the display, and return to owners. The address is:

THE CANADIAN DENTAL
ASSOCIATION
c/o Mr. Mitchell,
Antoine's Art Gallery,
939 Victoria Square,
MONTREAL.

We know a great deal of beautiful work is being done by Canadian dentists. It gives pleasure to all to see it, and it is an inspiration to those who produce the work to have it seen by others who appreciate fine craftsmanship. Please consider this a personal invitation to send in your artistic endeavours. Write and let us know what to expect. Keep this notice for reference.

A. R. WINN
Chairman Art Exhibit,
809 Medical Arts Bldg.,
Montreal, P.Q.



*Photograph—
Ashley & Crippen*

DR. JOSEPH H. JOHNSON,

Toronto.

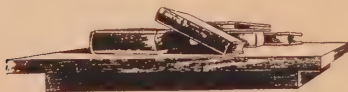
President, The Ontario Dental Association

Past President, Academy of Dentistry, Toronto.

Professor, Dental Oral Surgery and Anaesthesia, Faculty of
Dentistry, University of Toronto.

Assoc. Editor, *Journal of Oral Surgery*.

Chairman, Editorial Board of *Oral Health*.



A Study of the Forces Inherent in Orthodontic Appliances And the Selection of Forces for Tooth Movement*

by EDWARD E. JOHNS, D.D.S., B.Sc. (Dent),

Associate, Department of Orthodontics, Faculty of Dentistry, University of Toronto.

INTRODUCTION

THIS study was undertaken in an attempt to better understand the exact forces which the different types of orthodontic appliances exert on the teeth and to select the most suitable force for individual tooth movements. It (a) describes an apparatus and method for measuring these forces and (b) presents findings from use of the method to show which orthodontic appliances in general use, most nearly meet the physiological requirements.

HISTORICAL BACKGROUND OF THE PHYSIOLOGICAL ASPECTS OF THE PROBLEM

Physiological pressures have always been advised in almost every article on orthodontics and yet there seems to be few definite facts as to which orthodontic appliances operate, or more nearly operate, under normal physiological pressure. In 1904 Sanstedt¹² realized that excessive pressures slowed up tooth movement. Most research has been in connection with studies on the periodontal membrane. The works

of Oppenheim⁹ in 1911 and his numerous later reports^{10, 11, 12, 13, 14, 15, 16, 17} clearly differentiate between physiological and pathological tooth movements. In 1932 Swartz²⁵ was the first to introduce the idea that the ideal physiological force is one which does not exceed the capillary blood pressure. Stuteville²⁴ in 1937 was the first to point out that equally important as the force was the distance over which the force was acting. He stated that no pathological reaction would be present if the force was not active over sufficient distance to obliterate the blood vessels in the periodontal membrane. A third point was brought out by Moyers⁷ in 1950 in that the direction of the force is also important, tipping and extrusive movements being more easily carried out bodily and intrusive movements, as less of the blood supply in the periodontal membrane is cut off.

MECHANICAL ASPECTS

Many investigators, including Borschke¹, Irish⁴, McKeag⁶, Coleman²,

*This paper was presented as part of the requirements of the Faculty of Dentistry, University of Toronto for the B.Sc. (Dent.). The research was supported by a grant from the Dental Sub-Committee of the National Research Council.

Taylor²⁰, Sweeney and Isaacs¹⁰, Korkhaus⁵, have reported rather crude methods to measure forces in orthodontic appliances. These have varied from spring balances to weights and tables of flexibilities. Nowack⁸ in 1931 established that any desired force up to approximately 700 grams could be exerted by an 0.5 mm. finger spring with a tension sufficient to displace the end 1 mm. In 1933 Peyton and Moore²⁰ reported elaborate flexibility studies in gold alloy springs. These studies were very accurate but were time consuming and limited to tests on models and on springs of simple design.

In 1933 Richmond²¹ brought out the first practical instrument which could actually be used clinically in the mouth to measure orthodontic forces. This "stress and tension" gauge was based on the spring balance principle and could measure forces up to 16 oz. in a push or pull direction. However, it is not sufficiently accurate for research purposes.

In 1948 Howell and Manly³ brought out the first electronic strain gauge to be used in dental research. It was used to measure the maximum force which could be exerted by the bite on a single tooth. Two readings had to be taken to obtain a precision of ten percent.

Certain aspects of this problem have been studied with care and accuracy but each of the studies has had certain limitations when applied to research work. This study was therefore undertaken in order to better evaluate the forces inherent in the various orthodontic appliances in situ, and to determine which ones, if any, most nearly operate within physiological limits. Also an attempt is made to evaluate and select the ideal forces for the various tooth movements.

SUMMARY OF EQUIPMENT

The equipment used in this study consists of three different pieces of apparatus, all of which are electrically connected to each other. First of all

there is Statham Strain Gauge which is an electronic device for accurately recording minute amounts of force. It consists of a transducer for converting the force to electrical energy. This energy is then transferred to the Bush Strain Analyzer²², where it is greatly magnified and carried on to be recorded in written form on the direct inking oscillograph¹⁸. Deviations of 1/10 of 1 gram can easily be measured with the above equipment.



FIG. 1
Strain Gauge Being Used In The Mouth.

Fig. 1 shows the strain gauge being used to test the force being exerted on the teeth by the Johnson twin arch. In these procedures one tooth is tested at a time. The tooth to be tested is not ligated or attached to the arch wire. The strain gauge linkage pin, which has an attachment adapted to the particular appliance being tested, is brought to bear against the arch wire and sufficient pressure is exerted on it to carry the arch wire into the position it would normally occupy when seated into the bracket on the band. When a finger spring from a lingual

or labial arch is being tested, the strain gauge linkage pin is brought to bear against the finger spring with sufficient pressure only just to move it away from contact with the tooth.

ORTHODONTIC APPLIANCES TESTED

As many of the popular appliances as were suitable for testing by the strain gauge were studied. Readings were taken on the various size arch and spring wires which the individual appliance technique calls for. Studies were made on the high labial arch, Johnson twin arch, edgewise and removable appliances. All the readings on the appliances were recorded in grams on type 8/18 Stainless Steel Arch Wire and each test was repeated at least six times. Tests were also done on the Richmond Gauge to determine its clinical accuracy.

HISTOLOGIC STUDIES

In order to fully understand and appreciate the various orthodontic tooth movements and to select the appliance which is most suitable for the movement desired, an intimate knowledge of the periodontal membrane is essential, for without the periodontal membrane no tooth movement is possible. Histological sections of teeth, which had been exposed to different degrees of pressures by appliances during the various tooth movements, including tipping, bodily movement, rotations, intrusions, extrusions, and a combination of these movements, were studied.

FINDINGS

Swartz²⁵ stated that the ideal physiological force is one which does not exceed the capillary blood pressure. By this he no doubt means a force which is not sufficient to occlude the blood vessel. This force has been set down in orthodontic literature at approximately 25 grams/sq. cm. but this is a very difficult force to measure. It varies with the individual and is never even constant within the individual, being controlled by many factors. Dur-

ing rest most of the capillaries are collapsed, while in function they open. Carbon dioxide, histamine and lactic acid cause dilation, while adrenalin and pituitrin cause contraction. Inflammation will cause a sharp increase in the pressure, as much as 20 cm. H₂O in half an hour. Since the term "capillary blood pressure" is subject to such a wide variance for intelligible interpretation, we might better call it minimal occlusal blood pressure, defined as that pressure which is just sufficient to stop the flow of blood in the capillary vessel by the occlusion of its walls.

Thus any pressure which is less than the minimal occlusal blood pressure is physiological pressure and any pressure which is greater than the minimal occlusal pressure is a pathological pressure.

In the following studies, any of the forces which are greater than the minimal occlusal blood pressure will be designated in the Tables in *Italics* and in the Graphs as a solid Bar, indicating a pathological force is present. It must be understood that this pressure of 25 gms/sq. cm. is an arbitrary figure and it is not an exact pressure but rather a "range" below which we have physiological pressure and above which we have pathological pressure. This pressure is definite enough for any one individual at any one time but, since it fluctuates with the various individuals, it will have to be considered not as a point but as a range as far as this paper is concerned. The range according to the Graphs and Tables will be set at 20-30 grams with an average value of 25 gms./sq. cm.

Study No. 1

VARIOUS SIZED AUXILIARY SPRINGS FROM HIGH LABIAL ARCH

In this study finger springs ranging in diameter from .010" to .024" were tested. All the springs were soldered to .039" high labial arch wire and were wrapped three times around the wire.

Diameter of wire	Force In Grams		
	Maximum	Minimum	Average
.010 "	5	3	4
.012 "	11	8	10
.014 "	16	13	14
.016 "	23	18	21
.018 "	52	49	51
.020 "	64	58	60
.022 "	98	87	91
.024 "	126	115	122

TABLE 1.

The maximum, minimum and average force in grams resulting from varying the diameter of 8 mm. lengths of springs from a High Labial Arch.

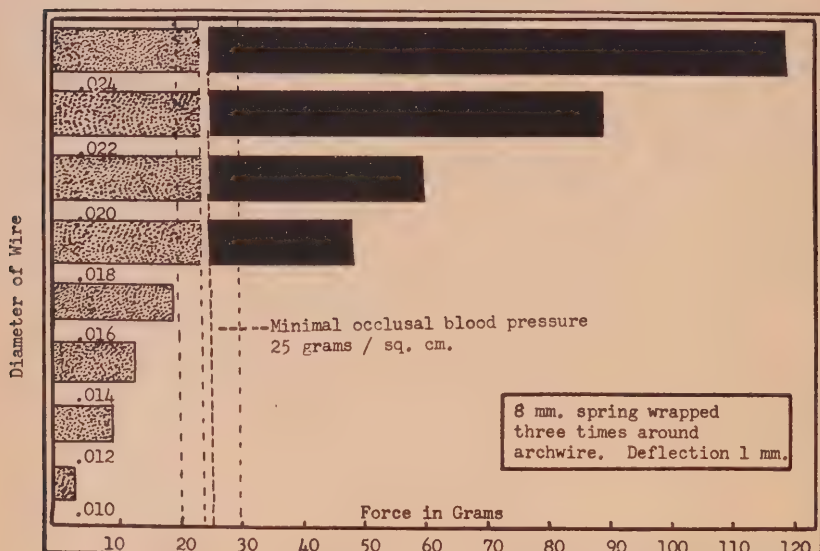


FIG. 2

A bar graph showing the average force exerted by various diameter springs from a high labial arch.

The springs were cut to an 8 mm. length and were tested at a deflection of 1 mm. Six readings were done on each spring. Table 1 shows the various wires tested and the maximum, minimum and average readings for each. The range of force varied from 4 grams for an .010" wire to "120" grams for an .024" wire.

Fig. 2 is a bar graph based on Table 1. It shows any of the forces greater than the minimal occlusal blood pressure as a solid Bar.

Study No. 2

VARYING LENGTH OF AUXILIARY SPRINGS FROM HIGH LABIAL ARCH

This study was completed to show the effect of varying the length of the auxiliary spring. Ten lengths of .020" round wire were soldered and wrapped three times on an .039" arch wire. The

lengths varied from 4mm. to 22 mm. and in each case the deflection was 1 mm. Table 2 shows a tabulation of lengths tested and the maximum, minimum and average readings for each. The force varied from 4 grams for the 22 mm. length to "180" grams for the 4 mm. length.

Fig 3 is a bar graph of this study based on Table 2. The results illustrate why clinicians have favoured recurved springs, high vertical loops, and clock springs, for these are all methods of lengthening the lever arm and thus producing a more gentle action.

Study No. 3

ROUND WIRE IN EDGEWISE BRACKETS

Eight sizes of round wire varying from .006" to .020" were studied in the

Length of Spring	Force In Grams		
	Maximum	Minimum	Average
22 mm	6	3	4
20 mm	9	5	7
18 mm	10	7	8
16 mm	13	11	12
14 mm	18	14	16
12 mm	27	21	24
10 mm	30	25	28
8 mm	49	46	48
6 mm	87	81	83
4 mm	185	178	180

TABLE 2.

The maximum, minimum and average forces in grams resulting from varying the length of .020" springs from a High Labial Arch.

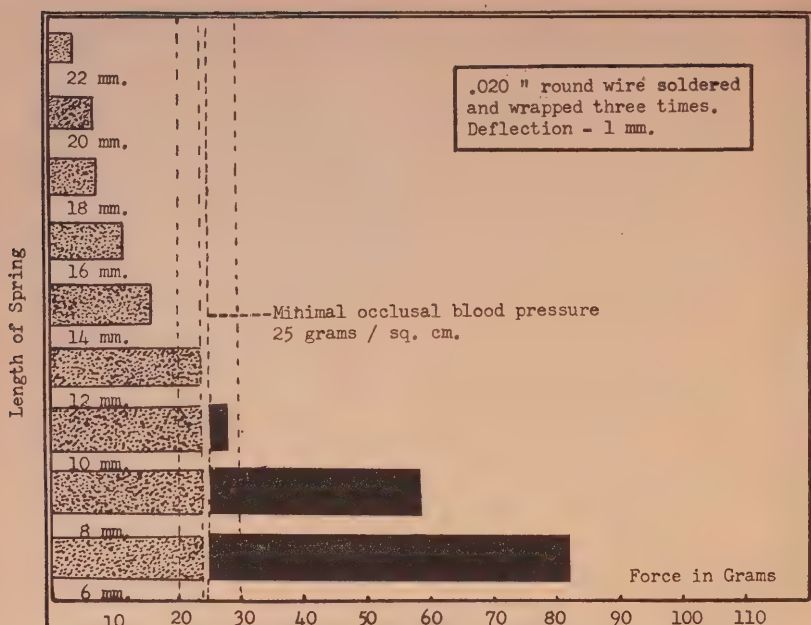


FIG. 3.

Bar graph showing the average forces in grams resulting from varying the length of .020" springs from a High Labial Arch.

full "strap up" employing edgewise brackets on all the teeth. All the readings were taken on a maxillary lateral incisor, all the other teeth being ligated to the arch wire. The distance of the deflection of the arch wire to the bracket seat was a constant .020". Table 3 shows a tabulation of the wires tested and the maximum, minimum and average readings for each. The range of force varied from 15 grams for an .006" wire to "675" grams for the .020" wire.

Fig. 4 is a bar graph of this study based on Table 3. In every instance the amount of force necessary to move the wire to the bracket was measured. There is a certain mobility of the tooth in its alveolar socket and this mobility allows part of the distance to be absorbed by permitting the tooth to move towards the wire. Therefore, af-

ter the tooth is ligated to the arch wire, all of these forces will have decreased to some extent.

Clinicians using the edgewise mechanism have learned to start their cases with a series of light round wires. This is sound therapy for two reasons (i) it takes as much advantage of tipping movements as is possible and (ii) it utilizes forces which are much lighter than are possible with the standard edgewise wire.

Study No. 4

DETERMINING THE FORCE EXERTED BY VERTICAL LOOPS

In this study tests were made on two vertical loops which were 9 mm. high and constructed of .0215" x .0275" steel edgewise arch wire. The appliance was ligated to the six maxillary anterior teeth and to the second bicus-

Diameter of Wire	Force In Grams		
	Maximum	Minimum	Average
.006 "	17	16	15
.008 "	26	22	25
.010 "	43	39	40
.012 "	84	78	80
.014 "	198	190	195
.016 "	386	378	380
.018 "	427	423	425
.020 "	680	672	675

TABLE 3.

The maximum, minimum and average force in grams resulting from varying the size of the Round Spring Wire with a constant deflection of .020".

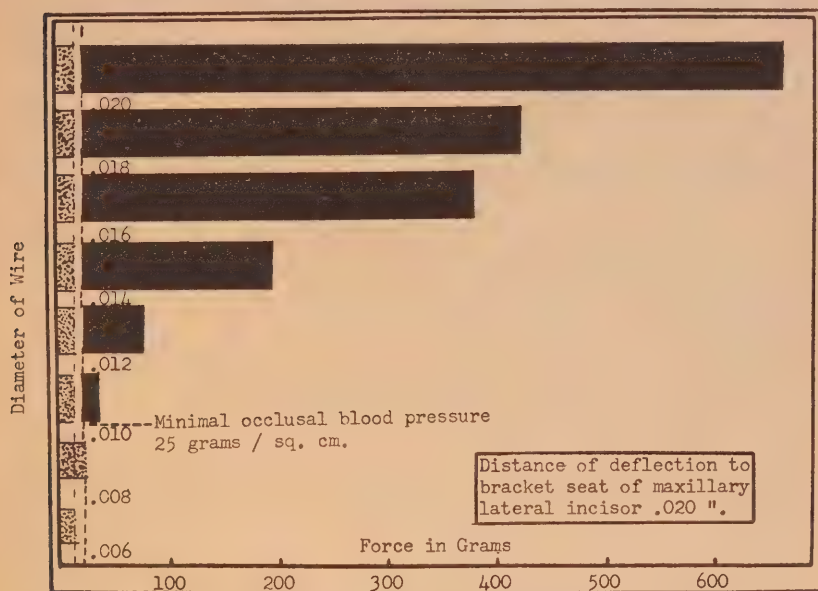


FIG. 4.

Bar graph showing the average force in grams resulting from varying the size of the Round Spring Wire with a constant deflection of .020".

pids and first and second molars, the first bicuspid having been extracted. Readings were taken when the vertical loops on each side were opened .5,

1.0, and 1.5 mm. Table 4 is a table showing the forces which were active at the three openings of the loops. The 1.5 mm. readings were unobtain-

Location of Loop	Loop Opening	Force in Grams		
		Maximum	Minimum	Average
Left Side	0.5 mm	370	360	364
" "	1.0 mm	807	795	800
" "	1.5 mm	900 + ?	900 + ?	900 + ?
Right Side	0.5 mm	340	335	338
" "	1.0 mm	760	745	750
" "	1.5 mm	900 + ?	900 + ?	900 + ?

TABLE 4.

The maximum, minimum and average force in grams resulting from various loop openings of the Edgewise Arch.

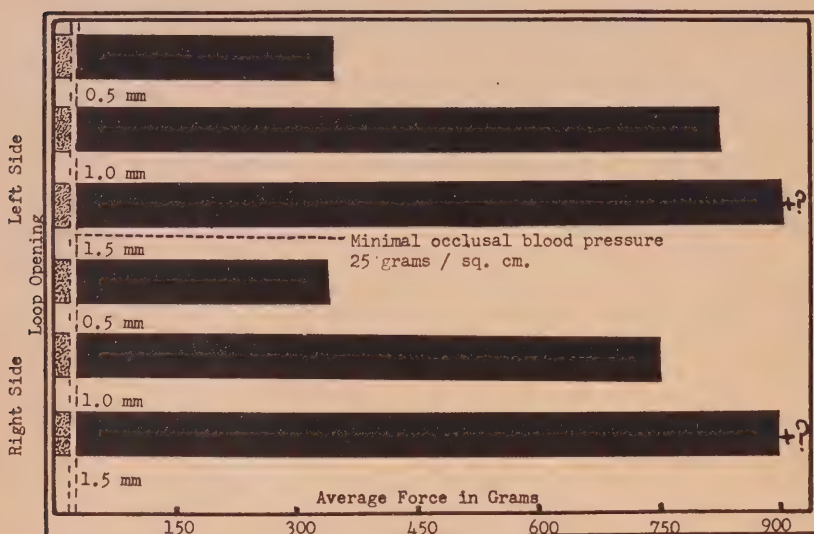


FIG. 5.

A bar graph showing the average force in grams resulting from various loop openings of the Edgewise Arch.

able with the strain gauge being used, as its upper limit "(2 lbs.)" was not sufficient to record the force applied.

Fig. 5 is a bar graph of this study. From this graph we see that opening the vertical loop 1 mm. such as is done to close space in extraction cases resulted in a force of "800" grams on one side and "750" on the other. This distributes a total of "1575" grams over twelve teeth. Even if each tooth bore an equal share of the total weight, and this is not the case, the load is unduly excessive. For those who prefer this method of space closure, it would be

were tested and also an appliance made up of a single strand of .010" wire were tested and also an appliance made up of a single strand of .010" wire and two sizes of flat wire. The readings were obtained on the maxillary lateral incisor with the arch wire deflection to the bracket seat being maintained at a constant .022". The arch wire was held in place on all the other teeth by Johnson caps.

Table 5 is a table showing the various forces exerted. There were six readings done for each size of wire and the force range was from "70"

Size of Wire	Deflection	Force In Grams		
		Maximum	Minimum	Average
.010" Single Wire	.022 "	79	65	70
.010" Twin Wires	.022 "	114	105	110
.010" X .0205"	.022 "	160	142	150
.015" X .0225	.022 "	295	272	280

TABLE 5.

The maximum, minimum and average force in grams resulting from various size arch wires with the Johnson appliance deflected a constant .022"

wise to use smaller sized rectangular or square wires or wires of a softer alloy.

A tooth attached to an edgewise arch wire rarely undergoes one simple type of movement. It may be tipped, intruded, and rotated simultaneously. This makes it most difficult to measure the forces acting within the appliance. It is important, however, to again note that in many instances the strain gauge now being used is unable to record the weight applied, even though its upper limit is "900" grams.

Study No. 5

FORCE RANGE IN JOHNSON TYPE APPLIANCES

For this study the Johnson Twin Arch made up of .10" and .011" wire

grams for the single strand of .010" to "280" grams for the .010" x .0225" rectangular wire.

Fig. 6 is a bar graph of this study. Of particular interest is the great difference in weights shown between flat wires of .012" and .010" thickness.

Study No. 6

FORCE EXERTED BY THE UPPER LIP ON THE HIGH LABIAL ARCHWIRE

When we consider the importance of good lip tonus in relation to the dental arches, it is not unreasonable to suspect that lip pressure on a labial arch wire could indirectly create a force on some of the teeth in the dental arch. To test this force two patients with good lip tonus were selected who were wearing a high labial .039" arch wire.

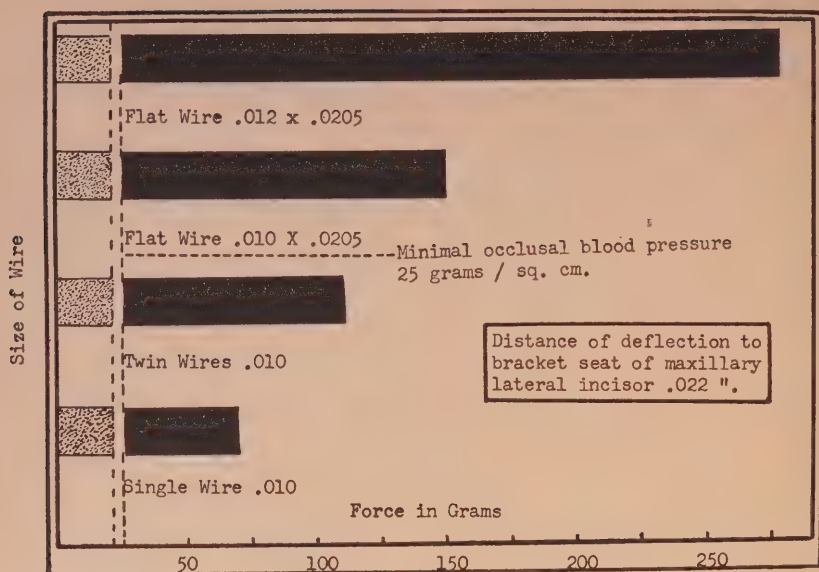


FIG. 6.

A bar graph showing the average force in grams resulting from various size arch wires with the Johnson appliance deflected a constant .022".

Several readings were taken showing an average force of 25 grams on the arch wire. The same experiment was repeated on two patients who had flabby lips or lips of poor tonus. The average force for these two was only 12 grams. From the orthodontic viewpoint, of course, good lip tonus is desirable and may be of considerable help in clinical orthodontics in obtaining posterior movements. Also it is interesting to note that this force falls within the force range of minimal occlusal blood pressure.

Study No. 7

TESTING THE ACCURACY OF THE RICHMOND GAUGE (Fig. 7)

In this study three gauges were tested. One had been in use for three years, the second for six months, and the third was a new one.

Table 6 shows a record of the readings taken. From this table we see that the new gauge is quite accurate at any one of its 1 to 16 ounce calibra-

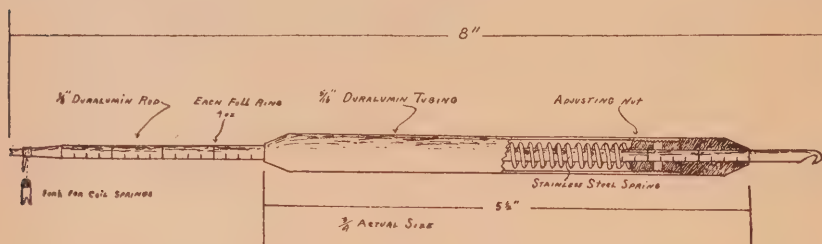


FIG. 7. Richmond Gauge.

Richmond Reading in Oz.	Strain Reading for 3 yr. old Richmond Gauge in Ounces				Strain Reading for 6 mos. old Richmond Gauge in Ounces				Strain Reading for New Richmond Gauge in Ounces			
	Max.	Min.	Aver.	Error	Max.	Min.	Aver.	Error	Max.	Min.	Aver.	Error
1	0.9	0.7	0.7	-0.3	1.2	0.9	1.1	+0.1	1.1	0.9	0.9	-0.1
2	1.8	1.6	1.7	-0.3	2.3	2.0	2.2	+0.2	1.8	1.6	1.7	-0.3
3	2.8	2.6	2.6	-0.4	3.1	2.9	3.0	+0.0	2.9	2.6	2.8	-0.2
4	3.7	3.6	3.6	-0.4	4.0	3.7	3.8	-0.2	4.0	3.8	3.9	-1.0
5	4.5	4.1	4.3	-0.7	5.1	4.7	4.8	-0.2	4.9	4.6	4.8	-0.2
6	5.4	5.2	5.2	-0.8	5.9	5.6	5.7	-0.3	6.0	5.8	5.9	-0.1
7	6.3	6.1	6.2	-0.8	6.6	6.2	6.3	-0.7	7.2	6.9	7.0	-0.0
8	7.4	7.1	7.2	-0.8	7.8	7.5	7.6	-0.4	7.9	7.5	7.8	-0.2
9	8.0	7.4	7.8	-1.2	8.9	8.7	8.7	-0.3	8.9	8.5	8.8	-0.2
10	8.4	8.2	8.3	-1.7	9.7	9.5	9.6	-0.4	10.0	9.7	9.9	-0.1
11	9.1	8.9	9.0	-2.0	10.7	10.4	10.5	-0.5	11.3	10.9	11.1	+0.1
12	10.5	10.4	10.3	-1.7	11.6	11.3	11.4	-0.6	12.4	12.2	12.3	+0.3
13	12.0	11.4	11.7	-1.3	12.4	12.2	12.3	-0.7	13.4	13.1	13.3	+0.3
14	12.9	12.5	12.6	-1.4	13.2	12.9	13.1	-0.9	14.0	13.7	13.8	-0.2
15	13.7	13.4	13.5	-1.5	14.2	13.8	13.9	-1.1	15.3	14.9	15.2	+0.2
16	14.5	14.1	14.2	-1.8	15.2	14.9	15.0	-1.0	16.0	15.8	15.9	-0.1

TABLE 6.

Tests on the accuracy of a new Richmond Gauge, one in use for 6 months and one in use for 3 years.

tions, the greatest deviation being 3/10 of one ounce.

The Richmond Gauge that had been in office use for six months is less accurate, the greatest deviation being 1.1 ounce.

The Gauge which had been in office use for three years was the least accurate, the greatest deviation being 1.8 oz. This, of course, is due to "tiring" of the spring within the gauge. However, under the 5 oz. range the maximum deviation for any of the gauges was only 7/10 oz. and it is within this range that practically all elastic forces are used clinically. Thus when the three year old gauge showed a force of 5 oz., actually only a force of 4.3 oz. was present. This instrument† is a must in the armamentarium of anyone carrying out tooth movements.

A BRIEF ANALYSIS OF THE PERIODONTAL MEMBRANE AND TOOTH MOVEMENT

The periodontal membrane is important for two reasons:

- (1) It consists of connective tissue in which are formed osteoclasts and osteoblasts, the cells which produce bone resorption and regeneration.
- (2) It has a very rich blood supply. This is important for if the blood supply is reduced as a result of the tooth movement less of this cellular activity can occur, and therefore the slower the movement will be.

TIPPING MOVEMENTS

There is some decrease in flow of blood on the tension side as the vessels are caught and slightly flattened between the principle fibres suspending the tooth in its alveolar socket. However, there is a greater decrease in the blood flow on the pressure side. If the pressure is great enough there will be a complete stasis of the vessels and if this occurs this area of the periodontal membrane must undergo ne-

rosis and resorption before the tooth can move. This is the first evidence of pathological pressure. The only reason gross permanent damage is not done is because of the rich anastomoses which maintain the vitality of the surrounding tissues at the alveolar crest on one side and just above the apex on the other side.

BODILY MOVEMENTS

In this type of movement, when the crown and root move together in the same direction, there is a lessening of blood flow on the side of tension and possibly complete stasis of the flow on the side of pressure, depending upon the force used.

Bodily movements are more dangerous and slower than tipping movements because they so reduce the blood flow, by eliminating the collateral circulation, that larger areas of the periodontal membrane must be regenerated before bone resorption and regeneration and, therefore, tooth movement can begin.

INTRUSIVE MOVEMENT

This is the most difficult movement to obtain as it most interferes with the blood supply. The entire surface area of the periodontal membrane is compressed against the bone and thus the entire surface of the alveolus has first to be regenerated.

EXTRUSIVE MOVEMENT

Here the reverse of intrusive movement is true and since there is little interference with the blood supply, movement is rapid.

ROTATIONS

This movement is a slow one, as the twisting and stretching of the fibres of the periodontal membrane diminish the size of the lumina of the blood vessels sufficiently to reduce the flow.

Thus the response of the periodontal membrane to tooth pressure varies

with the weight of the force and the distance through which the force is active. The sooner normal circulation in the areas of pressure and tension is established, the sooner the tooth will be permitted to move.

Theoretically, the ideal physiological force is a force less than that of the minimal occlusal blood pressure and acting over a distance of less than 1 mm. This is practically a clinical impossibility as shown by the number of forces over 20-30 grams in the above findings. However, the further our appliance forces deviate from these ideal conditions, the more likely the tooth movement will be accompanied by pathosis. Until an appliance is developed which will permit true physiological tooth movements, it seems wise for us to study and face the facts.

FORCE ANALYSIS OF THE ORTHODONTIC APPLIANCES

Labio-lingual Appliance

Movements with this appliance are limited to tipping with the possible exception of the molars which are banded. Bodily movements and rotations are very difficult to obtain.

Wide ranges of force are possible but it is relatively easy to maintain light auxiliary spring pressures. This is fortunate since the springs are continually active over greater distances than with multi-banded appliances. If light pressure is used, intermittent force application is unnecessary.

Edgewise Appliance

A force may be applied to any tooth in any direction with this appliance. However, the weight of the forces used varies greatly with the three orders of bends although all are greater than with any of the other appliances. The distance the force is active is relatively small which means that initial force, although great, is rapidly reduced with time. Because of the excessive pressures used with this ap-

pliance it is important that at least three weeks elapse between adjustments to allow the regeneration of the periodontal membrane. The Edge-wise appliance operates more in the realm of controlled pathosis than any other appliance, but because the distance of the force is small this is an excellent appliance if used without excessive pressures.

Twin Wire Appliance

Movements by this appliance are limited to tipping and rotary actions unless heavier flat wires are used to obtain bodily movements. Movements are much more efficient for the anterior teeth. Various forces are possible with ease of operation in the lighter force range. However, during histological examination of human teeth it was easier to cause root resorption with this appliance than with any other. This is because the force, although light, can be applied over too great a distance and for too long a time. This appliance is well designed to operate within desired limits but its danger lies in attempting to obtain too much tooth movement between adjustments.

Our modern appliances have become efficient in their movement of teeth, not so much in that their mechanical efficiency has been improved but because they more closely adhere to the two basic principles of tissue physiology. One is that forces must be selected which work with the periodontal membrane. This has been discussed. The second is that no tooth movements which work against the natural force tendencies of the muscles should be attempted. This is shown in massive expansion of the dental arches, a popular procedure in past times. Now we know that inevitably the teeth will return to a position of balance between the tongue and the buccal wall. Unfortunately, we know much less about anterior-posterior positions of balance. As the constant tendency of teeth is to

move mesially, can we move them distally?

During such movement there are three problems of force control:

- (1) natural mesial drift tendencies.
- (2) force of musculature acting through the incline planes.
- (3) possible counteracting mechanical forces within the appliance itself.

Fortunately cephalimetric lateral head plates, taken of cases where distal movement of maxillary first molars was attempted, tell us two important facts. The progress of distal movement depends upon the position of the maxillary second molar and also upon the number of teeth attached to the arch wire and not being moved in the same direction. If the maxillary second molar is not impinging on the cervic of the first molar or has erupted, distal movement is possible.

When a large number of teeth are ligated to an arch wire and movements of teeth are taking place in several different directions at the same time these movements exert resistance and interference to each other. This was found true of all appliances tested. Any of the appliances worked most efficiently in obtaining different movements if one segment was moved at one time. In other words, do not attempt mass distal movement of all the teeth at the same time. The movement of the posterior segment should be completed before beginning posterior movement of the anterior segment.

It is possible to move teeth to new positions disregarding the forces of musculature but is impossible to retain teeth in their new position with such disregard. Relapse of any case is only the failure to place the teeth in a position of balance between the forces acting on the musculature. At the present time we know much less about such balances during retention than during treatment and for this reason we shall continue to see the relapse of well treated cases. However,

these will be kept to a minimum if we adhere as closely as possible to these few rules in the selection of forces.

Natural Forces

1. So far as possible, work in the same direction as the natural forces of the masticatory system.
2. Correct any imbalances within the inherent forces of the masticatory system as soon as possible.
3. Work within the limits of tissue tolerance. Do not expect anything but a pathologic response to the use of excessive force.
4. Leave the case with all the natural forces well developed and in balance.

Now the artificial forces:

Artificial Forces

1. Select those teeth needing movement. Then determine the direction each tooth is to go and what type of tooth movement is involved.
2. Break down into groups the teeth which will be moved in a similar manner.
3. Decide the most logical sequence of tooth movement.
4. Choose the mechanism which will most efficiently allow each movement to be effected.

CONCLUSIONS

From the above findings and discussion we see that forces and pressures exerted by all orthodontic appliances in general and by the edgewise arch in particular, exert much more force than was formerly realized. The majority of these forces are active at much higher level than the minimal occlusal blood pressure and as such are pathological in action. Equally important, however, is the range and duration of the force and the direction and manner in which the force is applied. Thus, extreme care must be ex-

ercised to keep this pathological movement at the lowest possible level by the correct selection and manipulation of the appliance. Better still, let us strive to manipulate these appliances at pressures below the minimal occlusal blood pressure so that we may obtain true physiological tooth movement.

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Aids To Biomechanical Instrumentation In Endodontics*

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IN endodontic treatment the mechanical preparation of the living dentine composing the wall of the root-canal is akin to that given to the walls in the coronal portion of a tooth during cavity preparation. For many years attention was focussed upon drugs capable of sterilizing dentine. Now, teachers of operative dentistry are re-emphasizing the teachings of such men as Black¹, Johnson², Webster³, and others; viz, that the prime importance lies in mechanical preparation and cleansing of the dentinal walls. If you are teaching the subject of endodontics, or if you are known to practise endodontics, what is the first question which is invariably asked you in a gathering of dentists? The answer is, "What drugs are you now using in root-canal work?" Drugs—Drugs—Drugs—each book or periodical is read avidly to see if some new miracle drug has been found which will eliminate all pain, all infection and all work in one easy treatment. Rather should our questing be for improved methods of mechanical procedure. Essentially it is by mechanical methods that we make root-canals ready for the reception of the root filling material. True, medication is important but it bears the same relationship to the finished result that cleanliness bears to the dress worn by a beautiful girl. No matter how lovely the gown, its effect will be nullified if the girl it adorns is not personally immaculate. If the problem facing us were only a matter cleansing an inanimate object of minute size, the operation would be quickly and efficiently performed, but here we have living tissue which is in actual contact with the surrounding structures of the

body. Such a tooth cannot, therefore, be removed and placed in a bench vice for cleansing. Indeed, a drill press would make a most efficient means of opening, enlarging, and finishing the internal walls of the tooth. The biological aspect of the mechanical operation cannot be ignored and therefore we must adapt our technique to the restrictions which it imposes. The jaw must remain the vice which holds the tooth. The solutions of the mouth must be restrained from entering the structures of the tooth, and thus the rubber dam, accurately placed and carefully washed with an antiseptic, becomes an essential part of the endodontist's armamentarium. In like fashion all instruments which are to be used in the operation, must be sterilized previously by any bacteriologically acceptable method, in order to eliminate any dangerous micro-organisms which might be introduced into the root-canal.

With the tooth firmly held in a bench vice it is easy to place a gauge or rule upon it and to record the exact length of the tooth. In the jaw vice, however, the root of the tooth is hidden from the eye by an opaque wall of soft tissue and bone. Only by the penetrating eye of the x-ray are we permitted to gaze upon the structures which lie only a few millimetres from our touch. The image which we see upon the film records the details of the hidden parts of the tooth. Does it tell the truth? All too often the endodontic path is strewn with the anguish of apical pericementitis which brings distress to the patient and anxiety to the dentist, just because the friend upon whom we depended turned out to be a liar and a fraud. Accuracy of radiographic technique must be such that the resultant image upon the film portrays the living tissue beneath

*Presented at the World Conference on Endodontics, Philadelphia, June 1953

the mucous membrane in true and exact detail. An improperly positioned, exposed, or processed film may present an image which obscures certain otherwise obvious pathological variations through the superimposition or distortion of anatomical structures over the affected region. The discovery of x-rays has been a boon in endodontics but they must be used with careful judgment.

There are many dentists who are fully conversant with the fundamental steps which govern the opening of the root-canal of a tooth. These may be like myself constantly in need of a reminder that happiness in endodontics means observing the rules. Just for a moment let us consider some aspects of initial instrumentation which may have a serious effect upon the ultimate success of our treatment. In a maxillary anterior tooth there is one point of entry, and one only, which will permit root-canal instruments to enter along a straight line, and that is the only way any instrument should penetrate a canal¹,—in the lingual fossa just incisally to the cingulum. There, just a few millimetres to the labial lies the pulp, and if a small round diamond point followed by a bibevel drill is directed at right angles to the long axis of the tooth, they will surely pass quickly and safely into the broad fan of the pulp and not into the periodontal membrane. Then², and only then, is the direction changed and the funnel opening into the actual canal smoothed by a flame bur. Every endodontist who accepts referred patients, can recall an occasion when the pulp chamber had been opened by the referring dentist in such a manner that it proved almost impossible to place the rubber dam or maintain a sterile field. Beware of the inviting mesial or distal cavity. Files, reamers, and broaches are made of the finest steel but even they will break if subjected to rotational tension in contrary directions. It is dangerous to enter such a cavity with a file but it is likely to prove tragic if a reamer is the instrument of choice. The broken instrument is enough of a problem

without making it intentionally more serious. The small round diamond point is of great assistance when penetrating enamel, but it finds its greatest value in actually penetrating both enamel and dentine to enter the pulp chamber in the mandibular anterior tooth. In such a tooth the pulp chamber is small, and the use of a bibevel drill or round bur may so score the entrance to the pulp canal that it is most difficult to find. If, however, the diamond point is used to penetrate the pulp chamber, the entire surface will remain polished as a concave wall along which a fine instrument may slide to find the orifice of the root-canal. Bicuspid teeth too, present their regions of enticing danger. Too often the pulp exposure is upon the buccal in the gingival third. To attempt to carry through endodontic treatment by making entry to the root-canal from such a location is to invite disaster through instrument fracture. Seal such an opening and make entry through the occlusal surface of the crown. In molar teeth the entire outcome of the operation may hinge upon the opening of the pulp chamber without marring of the floor. Here perforation of the floor of the pulp chamber, or at least laceration of the floor, is an ever-present danger. The bibevel drill aimed at the largest root-canal is the best guide to safe entry of the chamber. Once entry has been made to the pulp chamber, a large round bur may be substituted for the bibevel drill and the roof judiciously removed by pull strokes. The body of the vital pulp should be excised with a sharp spoon excavator rather than with a round bur and the pulp chamber continuously irrigated with warm sterile normal saline solution until haemorrhage has ceased. If the orifice of each canal is not immediately evident, a drop of iodine will disclose the tissue leading to the mouth of each canal. Place the point of a number six reamer or file at the entrance of each canal and twirl it in the fingers to make an identifying funnel for subsequent instrumentation.

We have come quite a distance to-

gether but now our endodontic paths diverge. One goes along the way of the vital pulp and the other along that of the necrotic pulp. The former is usually smooth and straight, although it may present unexpected obstacles, but the latter is full of dangerous pitfalls. Let us pursue the vital path and see some of the problems which we may be called upon to solve.

The first mile is that of anaesthesia. The use of infiltration or conduction anaesthesia supplemented by intra-septal anaesthesia has brought happiness to elimination of pain. In this day of ever improving anaesthetics there is little excuse for subjecting patients to pain during instrumentation. Within the past two years great attention has been paid to the potency, rapidity of onset, and length of duration in the field of both the novocaine and lidocaine anaesthetics. Truly one of the great aids to biomechanical instrumentation in endodontics is the twentieth century anaesthetic.

The second mile along this path requires an accurate map if we are to arrive at the next mile post without over-running the mark. We also watch for the "stop" sign, the disregarding of which may involve us in a serious accident. In endodontics the radiograph is our map and the rubber or metal stop device is the "stop" sign. A smooth broach, properly equipped with a stop device should be passed up the root-canal to force the pulp mass to one side in order to minimize the danger of apical pressure during pulp extirpation. A study of the radiogram should aid in the selection of a barbed broach of proper diameter, and if the image upon the film is true to the original, and in like manner the impalation of a stop device upon the instrument is correct, the destructive point will stop exactly at the desired location. With the point of the barbed broach safely located very near the dentino-cemental junction, a one hundred and eighty degree turn and withdrawal should dislodge the body of the pulp strongly imbedded in the barbs.

Many here are fishermen. Would you use a minnow hook to land a trout? If secondary dentine has intruded upon the pulpal area then indeed may a fine broach be of choice, but if the root is not yet completely formed it may be necessary to entwine several broaches about each other to form a "Gang Hook" to remove the body of the pulp intact. The opposite extreme is found in many bicuspid and molars, which may present root-canals of such fine diameter that the use of any broach is discouraged and the laceration of the pulp by reamers and files proves the only safe method of extirpation.

As we pass along the third mile we find villages of "Disregarded Haemorrhage" and "Potential Discolouration." The number will never be known but what a host of disappointed patients must have accumulated with the passing years as a result of root-canal therapy. These patients were not disappointed in the preservation of the tooth, but rather they were distressed at the colour change which was all too apparent when left in such close proximity with its vital neighbour. Undoubtedly many accepted this marring of their beauty with the same resignation which is accorded to death and taxes, but others must have questioned, in their own minds, the necessity of such a result. The thoughtful dentist knows that by allowing blood to remain, even for a short time, within the confines of the pulp chamber that he increases the potentiality for discolouration very greatly. The use of intra-septal anaesthesia will so constrict the circulation that the flow of blood will be considerably reduced, but regardless of the technique used there will always be a certain amount of blood pocket in the pulp chamber. This blood must be quickly and thoroughly removed immediately after excision of the pulp. The use of the Seidner apparatus⁵ in combination with a large quantity of warm sterile normal saline solution will serve two purposes. First the apparatus causes a "geyser" like action within the root canal, which in associa-

tion with suction washes out free blood from the pulp chamber and canal, and second it encourages rapid clotting of the blood at the cut surface of the wound through the warmth of the irrigating solution. A similar result may be secured by using a glass syringe and a surgical aspirator to which has been attached a sixteen gauge blood needle. Again, other experiments encourage the use of 30% Urea^a as a means of cleansing the pulp canal and discouraging haemoglobin penetration into the dentinal tubulae. One of the most widely used techniques calls for the use of varying strengths of chlorinated soda, or sodium hypochlorite, in alternation with a 3% hydrogen peroxide solution^b. The formation of nascent oxygen produces an expulsive force which greatly aids in removing unwanted material from the root-canal by both mechanical and chemical means. Whatever may be your method of choice, do not be satisfied with your efforts until the coronal dentine is spotless clean.

The fourth mile is much smoother and easier to travel than the road which has gone before, but midway is found a small hamlet which we might call "Confidence Lost," and at the far limit of this place is a "Speed trap." My memory takes me back several years to an occasion when I was called to Toronto from the cottage in northern Ontario. I was travelling along the road at high speed when suddenly I entered a tiny hamlet. At the same instant I experienced a jarring shock and found great difficulty in bringing the car to a safe stop. Behind me, a few hundred feet was a large hole in the road, facing me was a broken spring and much internal dismay. Such indeed must be the feeling of a patient who has been carried painlessly through one appointment, encouraged to anticipate like treatment in the second, and is instead unexpectedly jolted to the grim reality of pain as he experiences the searing sensation of a reamer or file passing along the surface of a tendril of vital

pulp. The erstwhile trusting patient now watches every instrument with an apprehensive eye. Such an unfortunate situation can easily be avoided by completing the instrumentation at the first visit. The very action of reamers and files, suitably equipped with stop devices, and used in progression of sizes, will ensure that there will remain no confidence destroying element of vital pulp within the canal. You will note that I used the term, progression of sizes,^c and you will recall my reference to a "Speed trap." Too much speed causes many an accident both on the road and in endodontic instrumentation. There is a constant urge to use instruments which better judgment tells us are too coarse for the canal in its present diameter. Slow and careful instrumentation is the only safe rule to follow if we are to avoid an accident. The advocates of the reamer and of the file will argue the merits of their respective favorites as long as endodontics forms a part of dental practice. I am not like the "Hundred Percenter" of old who thundered that every pulpless tooth should be removed, but I must admit that I am a "File" man by preference. I likewise admit that I realize that the very form of the reamer reduces the danger of pressing material apically, but I cannot blind myself to the fact that that same instrument functions upon the rotational principle, and that fact alone greatly enhances the danger of fracture. Regardless of what instrument is used, it should be carefully examined before it is placed in the root-canal. A flaw in the metal, or a point of hidden rust can mean a broken instrument in the hands of the most careful dentist. If the root-canal is kept moist with a bath of sodium hypochlorite, double strength chlorinated soda, 30% Urea, or normal saline solution, and if the finest file can be introduced to the desired apical location, then space should be made for each subsequent file size, without danger of apical pressure and with the added safety factor of a pull stroke on straight lines. Especially valuable does

the file become in the tooth of the older patient. The work of research done in dental histology by such men as Bodecker⁸ and Hodge⁹ help us to avoid many pitfalls in the path of canal enlargement. An instrument used with relative abandon in the tooth of a child will all too often end its life of usefulness in the tooth of an adult. A knowledge of the biological maturation of dentine warns us that the dentine in the cervical region reaches its maturity some 25 to 29 years after eruption, while that of the middle third is delayed a further 5 to 10 years. Thus it is that we must approach instrumentation in the tooth of a patient nearing the fifth decade with much greater caution than with one in the first spring of life. All too often in this age of speed, operations which continued apace end by placing an occlusal restoration in the crown of a tooth whose root is permanently filled with a broken instrument.

Ahead of us we see the broad highway at the end of our path. We have not reached the end of the road, however, for there still remains much loose debris. Residual debris from severed odontoblastic extensions, traces of blood and fragments of cut dentine line the walls of the root-canal. The use of copious amounts of sterile normal saline solution, in conjunction with an apparatus embodying the suction principle may be of value, but at this point something more is required. Here the effervescent action of chlorinated soda and hydrogen peroxide have full play. Repeated use of such an interaction of chemicals will cleanse the wall surfaces of the root-canal, following careful instrumentation, so that the dentine conforms in open cleanliness to that in which we would entrust our finest gold inlay. Now this path has ended and before us lies the whole new field to explore, the country of Drug Therapy.

We must not forget that many miles back upon the trail we came to a fork in the road. We took the left path of Vitality, while leaving the right path

of Necrotic Pulp for another day. This path is not the clean straight road of the vital pulp, but rather one which may harbour the foul, odorous muskeg of putrescence, or perchance the empty arid path of dessication necrosis. In either case the path must be followed with extreme caution. Flood the way with a solution which will render innocuous the products of protein disintegration or of bacterial activity. Chlorinated soda, the weaker solutions of sodium hypochlorite, 30% urea, indeed any mild antiseptic which has both a rapid release of its available irrigational properties and low surface tension, to take full advantage of its chemical value, may be used. Repeated use of suction to withdraw elements caught up in the solution greatly reduces the possibility of accidental expression of these substances through the apical foramina before they have been rendered harmless. Let us not forget that the physiological maturation¹⁰ of which we spoke earlier bears the counterpart in the root possessing a necrotic pulp. Thomas¹⁰, Bodecker¹¹ and others have presented very definite evidence that there is a dental lymph within the dentinal tubulae which originates from within the dental pulp. Withdrawal of this lymph results in increased friability of the dentine, which leads to an explanation of the known fact that instrumentation of the dentinal walls of a root possessing a necrotic pulp is very difficult. Even of greater necessity than in the vital path is the requirement that all instruments should be used in a bath of solution so that this powdered dentine may not be further ground into the body of the root, but drift in free suspension until removed by suction or the effervescence of chemical action.

Occasionally either of the paths we have followed may be blocked by substances which defy the usual methods of removal. Twenty-five years ago the sound of blasting was quite common as roads were built. Today newer methods achieve the same result in many instances with much less distur-

bance. In endodontics the startling but effective sodium-potassium alloy, or sodium dioxide, are now used but seldom and in like manner the use of cell destructive acids is looked upon with diminishing favour. As we conclude our journey and study the path we have followed I hope that we shall all reaffirm our determination to adhere to the rules of the road in relation to endodontics, and that by employing the safe biological principles which govern any interference with the living cell, that another root-canal will become the pathway leading to the protective treatment of drug therapy, hermetical seal and ultimate happiness of both patient and dentist.

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Presidential Address to the Western Canada Dental Association

by JOHN W. CLAY, D.D.S., F.I.C.D., LL.D., Calgary, Alberta

SOME weeks ago a Calgary dental friend was having a little fun at my expense by telling me what not to say in making my Presidential address. It went something like this. In a brief moment of elevation and power, Presidents are apt to feel they have received a touch of the Divine spark, and so proclaim with the voice of authority on all matters both within and without the realm of their own particular field of knowledge. Above all he warned me not to burden my listeners with profound observations on World Affairs—of which he said I knew very little—and that I should keep away from the subject of communism which so many speakers turned to for want of ideas to fill up a vacant page or two.

On thinking about this advice a few days later, I was impressed with the soundness of the first part of it, but the

idea of dentistry under communist rule remained with me. It is not an academic question of what it might be like to practice one's profession if communism gained control. It is already a living reality for more than half of the people of the world. Let us not feel too sure that we ourselves may not find ourselves under its sway and ruled with absolute and ruthless power, perhaps from afar. We do not know much about the position of dentists in Russia and the satellite countries. There is plenty of evidence however that the freedoms which we enjoy are taken from them.

Last summer I was fortunate in attending the International Dental Congress at London. You have heard elsewhere that it was a magnificently housed and extremely well-managed Convention attended by well over 4000 dentists from many parts of the World.

One of the significant things about this meeting was that the attendance was wholly from the free countries. It is not possible that there was none of our confrères from communist countries who would not have wished to attend, and who would not have benefited by meeting and hearing leading men from many countries. Yet none of them was there.

One of the interesting contacts I made was with a small group of Finnish dentists. With them was the husband of one of them. He was a government engineer and spoke English fluently. He told me that dentists in Russia were regimented completely both in their practice and in their private lives. "As for ourselves in Finland," he went on, "we are a democracy as in Canada and are free as you are. We live in fear though and have learned that whatever we feel within ourselves about Russia and Communism must never come out of the mouth."

We have only to think of the recent arrest of Soviet doctors for alleged poisoning of political leaders, and then their curious exoneration instead of the death sentence, as it suited the political needs of the moment, to realize the precarious position of the profession under communism.

While socialist legislation in Great Britain has not destroyed personal freedom, we know that it is rapidly bringing to an end independent private practice. Within a short time complete control of the dental profession, from its management down to the smallest detail of office practice has come under the control of and subject to the direction of the non-professional appointees of the government.

In talking to one of the leading officers of this International meeting he told me that, as he expected, the attendance of British dentists was very small. Here at their doorstep was the most advanced dental knowledge from a large part of the world. Due to government recognition of only the simplest types of dental service and

that on a basis of quantity only there was no incentive to learn new techniques which could not be practised. I was told that the great majority of British dentists appeared to have become resigned to doing in the least time the scheduled operations and to filling in the multiple forms required before payment would be made.

Let us now for a few moments consider the impact of these world conditions on ourselves, our families and our profession. What of the future in Canada? What are we doing and what can we do to help ourselves?

Nature's emphasis has always been on the individual. Her sole use of group action is to afford the individual an opportunity for development and to protect him from the attack of other groups. So in the profession of Dentistry the greatest good both to the individual and his patient comes when there is the greatest freedom.

That freedom is now in danger. Just as the dark cloud and lightning on the horizon on a hot night in summer tell of a violent storm not far away—one which may soon reach us — so we see the growing forces of bureaucracy steadily rising from many directions. Indeed, all of the dangers are not far from without. There are a number of serious conditions developing within our borders, which must be faced and wisely dealt with if we are to go forward.

The time is short and the occasion unsuitable for a long survey of these matters which are vital to the future of every one in this room. However, if you will bear with me, I should like to spend a moment or two of your time to consider a fundamental and vital problem, the question of recruits to our profession. A group is not better than the individuals who compose it—in fact, not nearly as good — for the reason that many are not seized with the need of doing their share for the common good and for the advancement of all.

For the future, we must have an ample and superior group of students

entering the profession, and there our major problem comes in view. I hope you will pardon me if I repeat, because of their importance, some of the facts you already know.

Canada is a rapidly growing country and needs at the present time a minimum of two hundred and eighty new graduates in dentistry each year to maintain the present ratio of dentists to population. The capacity of our dental schools in the final year is about two hundred. The number who will graduate in the next three years will average less than one hundred and sixty five per year. Even if new schools are planned and built at once, there will be a shortage of perhaps a thousand in the next eight years before such schools could produce graduates.

From a selfish point of view this situation might be viewed as very satisfactory for the reason that it assures a growing demand for the services of all of us. Therein lies the danger.

The general public is at all times somewhat critical of the professions and their management, and the difficulty of obtaining dental service is becoming increasingly apparent, particularly in the rural areas. The Federal and Provincial Governments are well aware of the problem, and as the shortage grows they will be forced by public opinion—which they are quite sensitive to, at least in electoral years—to take action to make more dental service available.

One partial answer we all know. An increase in public dental health education, the training of dental hygienists and the fluoridation of communal water supplies would reduce greatly the incidence of dental disease. It would pay the public even in dollars many times its cost. Our dental organizations have tried to impress this on our governments with only isolated and meagre results.

Unfortunately, the high cost in time and money required for dental training, and for setting up a dental office, as opposed to the large salaries and opportunities offered by business to

high school graduates is causing a marked lowering in the number of suitable applicants for dentistry. Should this trend continue the building of new schools will not solve the problem.

The alternative of Government interference in lowering the level of training for entrance to practice is squarely before us. We who are in the dental profession know that our present standard is none too high to give good service, but the average citizen is somewhat suspicious that it is a means of keeping a closed corporation for our own good. This is a somewhat odd attitude when combined with it is a good deal of criticism of dental capability.

Such in outline is what I consider the major problem facing Dentistry. That means facing you and me. What are you doing and what can you do to protect your future? Make no mistake. The public will demand dental service, and governments will be forced to see that it is provided. To the great mass of people the right to practice dentistry in Canada is a certificate of competence.

We have had a fine symposium on public relations presented to us at this meeting. The basic factor in public relations is your individual capability in working for your patients, your honesty of purpose and fair dealing, and your contribution as a good citizen to your community. By each one of us public opinion is formed, and by each individual, dentistry is judged. Are you as an individual keeping these things in mind? Are you for instance, on the lookout for the right type of young high school graduate to encourage him to take up the study of dentistry?

We have our Provincial Boards and the Canadian Dental Association. The members of these groups are giving a very large amount of time to meet many problems for your benefit and mine. Without their constant effort to protect the public from poor and dishonest dental service, and to protect your rights and mine, dental practice would rapidly become a miserable affair. Again I ask each one of you to

consider if you are doing all you should for dentistry.

I should like to leave two thoughts with you. One is that we take more seriously our obligations as citizens of a free country to assist in every way in the preservation of our freedom. The other has a more personal and possibly a more selfish note. We must be prepared to contribute more money as required to maintain the advantages which have been handed over to us by our predecessors.

Dentistry does not provide great riches, but it gives an opportunity for an important service to our communi-

ties and offers us a good way of life. It deserves and needs on the part of every one of us a greater expenditure of time and effort to improve that service, and to maintain the benefits which justly come from our important contribution to the health of the people of Canada.

My closing word is to thank you all for the great honour you have conferred on me as President of this Society, to congratulate you on your excellent choice of officers for the coming two years, and to ask you to give them the fine support you have so freely given to the present Executive of the Western Canada Dental Society.

Highlights of 17th Meeting, N.R.C., Associate Committee On Dental Research

by S. J. COOK,* Ottawa, Canada

THE 17th meeting of the Associate Committee on Dental Research was held in the National Research Building, Ottawa, March 2nd and 3rd, 1953. Reports were presented on fifteen projects which are being supported by grants from the Committee.

On the matter of Dental Fellowships, it was pointed out that the Committee has been unsuccessful for two years in obtaining applications for the annual awards it has been offering to graduates in dentistry and it was recommended that provision for these awards be made on a higher scale. It was suggested that fellowships for graduates be offered at \$1800 per annum and that Fellowships of the value of \$2000-\$3000 be provided for those who have had experience in research following graduation.

The Committee also asked authority to offer one senior dental research fellowship of an annual value of \$3000

to \$5000, renewable annually for a period not exceeding five years.

These recommendations for the higher scales for fellowship awards and also the provision of one senior dental research fellowship were subsequently approved by the National Research Council.

Eleven grants-in-aid of dental research were renewed for a further year and four new applications were approved. Two other applications were subsequently considered by the Executive and approved. The total amount of money thus provided by the Committee for dental research projects in 1953-54 was \$27,090. The Committee has given its support to 52 projects in the nine-year period 1945-46 to 1953-54.

Members of the Committee are appointed by the National Research Council for a three-year term, which may be renewed once. Ex-officio members include the President of the National Research Council and one representative from each of the Government Dental Services including the

**Secretary of the Associate Committee on Dental Research of the National Research Council of Canada.*

Royal Canadian Dental Corps, the Division of Dental Health of the Department of National Health and Welfare, and the Directorate of Dental Research, Department of Veterans' Affairs.

Other members are chosen to represent (i) the dental profession and (ii) the basic and medical sciences. There are 18 members, in addition to the Secretary, who is an officer of the National Research Council.

This year five members completed their terms of appointment and were replaced on the Committee by new nominees. Those retiring were: Dr. C. H. Best, Toronto; Dr. M. H. Garvin, Winnipeg; Dr. J. J. Rae, Toronto; Dr. H. R. MacLean, Edmonton; and Dr. D. L. Thomson, Montreal. The Committee expressed its appreciation of the great services rendered by these members, in an appropriate resolution.

New members appointed by the National Research Council for a three-year term to March 31st, 1956 were:

Dentists

Dr. C. D. Husband, practising dentistry at Red Deer, Alta.;

Dr. A. G. Racey, Associate Professor of Oral Pathology, McGill University.

Basic Sciences

Dr. J. Aldous, Head of the Department of Pharmacology, Dalhousie University

Dr. J. M. Beveridge, Head of the Department of Biochemistry, Queen's University

Dr. C. P. Leblond, Professor of Anatomy, McGill University

The Committee maintains for reference a list of suggested projects for research in addition to those on which grants-in-aid have been awarded.

Space does not permit a report to be made on the projects discussed at the meeting, but in view of the widespread interest in ammoniated dentifrices,

mention may be made of certain observations summarized from a paper by Dr. J. J. Rae on "Ammonia Production in Saliva" as follows:

"The use of ammoniated dentifrices and urea-containing tooth powders seems to be based on a rather insecure foundation, since ammonium salts have been shown to have no specific inhibitory effect on acid production.

"It has not been proved that saliva from caries-free individuals contains or produces more ammonia than saliva from caries-active persons. On the basis of our evidence there is no relation between ammonia production of saliva and the degree of dental caries.

"The ability of saliva to convert urea to ammonia has been demonstrated but again no direct relation has been observed between urease activity and the degree of caries in an individual.

"High concentrations of urea and either sodium or ammonium salts do inhibit lactic acid production but lower concentrations stimulate acid production in saliva-glucose mixtures.

"More information is needed about the cause and progress of dental caries before any pronouncement can be made about the efficacy of any suggested treatment. However, if we subscribe to the bacteria-acid theory it seems unlikely that ammonium salts exert any specific inhibitory effect apart from the fact that they act as buffers.

"On the other hand the ammonia producing mechanisms of salivary bacteria should repay further study. If they should be a responsible factor in maintaining neutrality in the saliva the indiscriminate addition of enzyme inhibitors to saliva such as fluoride and penicillin might be of doubtful value since such inhibitors might destroy the ability to produce ammonia."

"The noiseless foot of time treads softly by and ere we think of manhood, age draws nigh."

The Forum

THOUGHTS TO BE REMEMBERED BEFORE DOING IMPACTED TOOTH REMOVAL

by JOSEPH C. TAM, D.D.S., M.S.D., School of Dentistry University of Minnesota

Condensed from *Minneapolis D. Jour.*

1. Localization of the impacted tooth as to whether it lies on the lingual, buccal, or midway between the cortical plates is determined by serial radiograms.

2. When using a scalpel, sever all periosteal fibres through the length of the incision. If this is not done, a torn flap or difficulty in raising a flap will result.

3. For impacted teeth using flaps with vertical incision, be sure to make the vertical incision at least a tooth distant to the impacted tooth such that when the wound is closed the flap will rest on a solid foundation.

4. When raising a mucoperiosteal flap, remember that the mucoperiosteum is firmly attached at the gingival third.

5. Use a retractor to prevent injury to fingers, to get a better exposure of the operative field, and to minimize surgical trauma to the tissues.

6. To uncover a root or tooth, it is best to use a number 560 cross-cut fissure bur sharpened to a bibevel chisel edge on the mandible which is movable and dense. The bur is used with intermittent pressure and washed with a stream of water by the assistant.

7. When removing bone with a bur to uncover an impacted tooth, carefully estimate the location of the impacted tooth by using known landmarks and radiograms. A necklace of drill holes just through the cortical

plate over this area is made and connected by cutting outward with a bur from one hole to neighbouring holes. The plate of bone is then removed intact by inserting a wedge-shaped instrument in the slot and fracturing it.

8. When removing bone with a chisel to uncover an impacted tooth, a razor-sharp chisel with an acute bevel is used. The chisel is directed along the long axis of the tooth and used with either hand pressure or mallet blows which are sharp, rapid, and continuous.

9. Remove bone present on buccal, mesial, and distal surface of impacted tooth with bur or chisel and remove pericoronal sac with a blunt nose rongeur to demonstrate position, size, and shape of impacted tooth.

10. For impacted tooth which can be removed with a sharp-pointed elevator, insert the point into the cementum of the root as near the apex as possible, and virtually lift the impacted tooth out with an arc motion such that the power is applied along the long axis of the tooth.

11. For impacted tooth which can be removed with an incline plane elevator, slide blade along side of root to apex and by displacement effect or lever effect, or a combination of both remove impacted tooth.

12. To split an impacted tooth, be sure it is firmly attached in its socket. Next, place double bevel chisel edge in a groove or fissure and support jaw before and during the process of strik-

ing chisel with mallet. The blow should be strong and sharp. If unsuccessful in two or three tries, a different technique of tooth division should be used.

13. To section an impacted tooth with a bur, enter centre of exposed tooth seven-eighths of the way through. Apply lateral pressure mesially and then distally. Insert a wedge-shaped instrument into this slot and fracture off a fragment. Repeat sectioning technique whenever necessary until entire impacted tooth is removed.

14. Inspect and cleanse wound of bone and tooth particles, foreign bodies, and pericoronal sac before closing wound.

15. Control haemorrhage with a suitable haemostatic agent.

16. The vertical incision of muco-periosteal flap using this type of incision should be closed first to avoid "puckering" and ill-fitting closures. Treatment of the wound by complete closure or by antibiotics is dependent on the discretion of the operator. The palatal flap is returned to its original position and held there by the patient's tongue for several hours to avoid haemorrhage and a haematoma. Sutures are, therefore, not needed for uneventful healing.

17. Take postoperative radiograms.

18. Give the patient postoperative instructions.

THE RISE AND FALL OF FOCAL SEPSIS

by MARTIN A. RUSHTON, M.D., F.D.S.

Condensed from Dental Record, March 1953.

It is just over fifty years since the conception of focal sepsis was successfully launched and it is perhaps a good time to look backward and see what happened. It was something that shook dentistry to its roots: like a great wave it washed half of dentistry away, and now that the flood has subsided we can look back and wonder.

I may summarize the present position as follows: Very few specific general diseases are now regarded as the direct result of dental sepsis, but it is not doubted that infection can spread from the gums and teeth in certain circumstances (a) through the local tissues causing cellulitis and osteomyelitis; (b) along mucous surfaces causing sialoadenitis, pulmonary abscess, etc.; (c) through the lymphatics and blood vessels causing adenitis, septicaemia and pyaemia, and endocarditis. The sources of infection are ulcerated surfaces such as gingival pockets and any deeper areas of infected dead tissue which are not effectively walled off by the body defences; and even a well encapsulated area of infection

may become dangerous if it be mechanically disturbed or if the patient's resistance falls.

We can no longer hope to cure all sorts of diseases by extracting the patient's teeth, but we can and do hope to preserve the patient's health by preserving his oral health. Let us not suppose, however, that we have reached a period when no further intellectual effort is required. When Hunter observed the association of stomatitis and anaemia it led him by a false assumption, and subsequently the medical and dental profession, to an intensive study of the effects of dental illness on the general health. Had he made another choice and decided that the stomatitis was due to the anaemia, we should possibly have had fifty years of intensive study of the effects of general ill-health on the teeth and gums. That is the field which promises to repay intensive study still, and I hope we shall bring to it a more critical outlook, but no less enthusiasm, than was shown in the rise and fall of focal sepsis.

JOINT MEETING THE CANADIAN DENTAL ASSOCIATION THE ANNUAL MONTREAL FALL CLINIC

UNDER THE AUSPICES OF

THE COLLEGE OF DENTAL SURGEONS, P.Q.

MONTREAL, QUE. OCTOBER 18-19-20-21, 1953

P R O G R A M M E

(SUBJECT TO CHANGES)

SATURDAY, OCTOBER 17th.

Intercollegiate Football, McGill University vs. Western. (Apply for tickets direct to McGill Athletic Office, Montreal, Que.)

SUNDAY, OCTOBER 18th.

11:00-5 P.M.—	Registration
9 P.M.—	Evening Musicale, featuring Radio Choral Singers and Artists, Classical and Semi-Classical Musical numbers.

MONDAY, OCTOBER 19th.

8:30 A.M.—	Registration
9:00 A.M.—	Exhibits
9:30 A.M.-12—	Table Clinics (see below for complete list)
12:30 P.M.—	C.D.A. Luncheon and Business Meeting
3:00 P.M.—	H. A. BAXTER, M.D.C.M., M.Sc., D.D.S., Surgeon-In-Charge, Sub.-Dept. Plastic Surgery, Royal Victoria Hospital. Subject: "A Complete Rehabilitation Programme for Cleft Lip and Palate Cases".
4:00 P.M.—	E. L. R. WILLIAMSON, Administrator of the Canadian Dental Association Pension-Assurance Plan, Brockville, Ontario.
4:15 P.M.—	The George Grieve Memorial Lecture, G. V. FISK, D.D.S., Toronto. Subject: "Recent Trends in Orthodontics"
7:00 P.M.—	Exhibits open until 10:00 P.M. Hospitality Night. Class Reunions, etc.

TUESDAY, OCTOBER 20th.

9:30 A.M.—12:30 A.M.—	D.Sc. (Sorbonne), Professor of Anatomy, Faculty of Medicine, McGill University. Subject: "Radioisotope Studies in Tooth Formation"
HANS SELYE, M.D., Ph.D., B.Sc., F.R.S.(c), Professor and Director Institute of Experimental Medicine and Surgery, University of Montreal. Subject: "The Diseases of Stress"	E. DALE TROUT, B.S., Sc.D., JOHN P. KELLY, B.S., ARTHUR C. LUCAS, Milwaukee, Wis. Subject: "The Radiation Hazard to Patient and Operator in Dental Radiography".
Atomic Energy in Dentistry Programme, Participants—W. W. WAINWRIGHT, D.D.S., M.S., F.A.C.D., Professor of Radiology, College of Den- tistry, University of Illinois, Chicago. Subject: "Dental Developments with Radio- isotopes"	D. L. TABERN, M.D., Head Special Research, Abbott Laboratories, Chicago, Ill. Subject: "Advances in Pharmacological and Medical Uses of Radioactive Substances"
C. P. LeBLOND, M.D. (Paris), Ph.D., (Montreal),	

10:45 A.M. - 12 — GROUP CLINICS**Group Clinicians:**

1. **P. G. ANDERSON, D.D.S.**, Professor of Operative Dentistry, University of Toronto, Ontario.
Subject: "Operative Dentistry"
2. **H. BERK, D.D.S.**, Instructor Oral Paediatrics, Tufts College Dental School, Boston, Mass.
Subject: "Treatment and Restoration of Injured Teeth"
3. **H. M. CLINE, D.D.S., F.A.C.D.**, Vancouver, B.C.
Subject: "Gold Foil, Its Uses and Influence on Operative Procedures"
4. **S. CRIPPS, D.D.S.**, Dept. Periodontia, McGill University, Montreal, Que.
Subject: "Occlusal Equilibration"
5. **D. P. DOBSON, CDR., (DC) U.S.N.**, Bethesda, Md.
Subject: "Intermaxillary Relations in Complete Denture Construction"
6. **G. M. FITZGERALD, D.D.S., F.A.C.D., F.A.A.-O.R.**, University of California.
Subject: "Radiography"
7. **R. GENDRON, D.D.S.**, Assistant Professor of Periodontia, University of Montreal.
Subject: "Temporo-Mandibular Disturbances Associated With Faulty Occlusion. (Conservative Treatment)".
8. **R. J. GODFREY, D.D.S., M.Sc. (Dent)**, Professor of Prosthodontia, University of Toronto.
Subject: "Diagnosis and Mouth Preparation for Partial Dentures"
9. **W. J. HEDMAN, CDR. (DC) U.S.N.**, Bethesda, Md.
Subject: "Culture Controlled Aseptic Techniques in Endodontics"
10. **J. B. MILLER, D.D.S.**, New York, N.Y.
Subject: "Use of Hydrocolloids in Operative Dentistry"
11. **W. F. WALFORD, D.D.S., P. J. GITNICK, D.D.S.**, Dept. of Periodontia, Faculty of Dentistry, McGill University.
Subject: "Practical Periodontia"
12. **R. R. MCINTYRE, D.D.S., F.I.C.D.**, Calgary, Alberta.
Subject: "Preventive Orthodontics"
13. **MAJ. E. C. PURDY, R.C.D.C.**, Ottawa, Ontario.
Subject: "Principles of Endodontia and Periapical Surgery"
14. **A. RAYMOND, D.D.S.**, Assistant Professor of Oral Surgery, University of Montreal.
Subject: "Anatomy and pathology of the Temporo-Mandibular Joint"
15. **H. H. SHAPIRO, D.M.D.**, Assistant Professor of Anatomy, Columbia University, New York, N.Y.
Subject: "Differential Diagnosis of Dental Pain"
16. **LT.-COL. G. B. SHILLINGTON, R.C.D.C.**, Ottawa, Ontario.
Subject: "Preservation of Supporting Tissues in Partial Denture Prosthesis"
17. **V. L. STEFFEL, D.D.S.**, Chairman Partial Denture Dept. Ohio State University, Columbus, Ohio.
Subject: "Removable Partials and Related Prosthetic Phases"
18. **D. McG. TANNER, M.B.E., D.D.S, BSc (Dent), F.I.C.D.**, Associate Professor of Dental Surgery and Anaesthesia, University of Toronto.
Subject: "Principles in Oral Surgery"

12:00 —

Lunch Where You Wish.

2:30 P.M.—

The entire afternoon programme will be held at the School of Dentistry, University of Montreal. See the July issue of the C.D.A. Journal for a complete list of events. Buses will begin leaving the hotel at 1:30 P.M., returning at the close of the programme. The following table clinics of the "Atomic Energy in Dentistry" programme will also be held at the University of Montreal—"The Preparation and Distribution of Radioactive Substances for Therapy and Research"

DR. D. L. TABERN, Chicago, Illinois.

"The Measurement of Secondary Radiation from the Dental X-Ray Unit"

DR. E. D. TROUT, Milwaukee, Wisconsin.

"Dental Radiology and Radiobiology"

DR. W. W. WAINWRIGHT, Chicago, Illinois.

6:00 P.M.—

Exhibits Closed.

7:00 P.M.—

President's Reception and Dinner Dance (Dress Optional)

Sponsored by the College of Dental Surgeons, Province of Quebec.

WEDNESDAY, OCTOBER 21st.**9:30-11:30 A.M.—**

Essays

12:30 P.M.—

Montreal Dental Club Luncheon—Entertainment.

2:30-4:00 P.M.—

Group Clinics Repeated.

See Tuesday A.M. programme.

TABLE CLINICS

DR. D. SOLOMON, Montreal	"Porcelain Jacket Crowns"
DR. MERVIN ROGERS, Montreal	"Local Anesthesia"
DRS. C. WALSH and H. SLATER, Montreal	"General Anesthesia for Children"
DR. R. A. CLAPPISON, Toronto	"The Typadan in Operative Dentistry"
DR. ROBERT WEINER, Montreal	"Oral Surgery"
DR. A. D. RICHARDSON, Montreal	"How to Make Cultures"
DR. H. B. SQUIRES, Ottawa	"Periodontal Packs"
DR. R. W. MARSHALL, Toronto	"Positive X-Ray Procedure: Better Quality Less Time"
DR. D. KENNEDY, Montreal	"The Use of the High Labial Appliance"
DR. CLAUDE MADORE, Montreal	"Different Muco-periosteal Flaps in Oral Surgery"
DR. H. I. MacLEOD, Lennoxville, Que.	"Partial Dentures"
DR. J. A. MacLEOD, Lakeshore	"Matrix Bands for Deciduous Teeth"
DR. G. K. CLARKE, Ottawa	"Chairside Education of Child and Parent"
DR. J. B. McGUIGAN, Halifax	"The Treatment of Fractured Incisor Teeth"
DR. L. B. AMYOT, Schenectady, N.Y.	"Dental Remedies and Preparations"
DR. NEIL FEE, Plattsburg, N.Y.	"Orthodontia for the General Practitioner"
DR. V. TREMBLAY, Montreal	"Endodontia: Case Histories"
DR. R. COULOMBE, Montreal	"Gold Foil"
DR. G. PELLETIER, Montreal	"Equilibration of Occlusion"
DR. G. BARIL, Montreal	"Electro-Plating of Inlay Impressions"
DR. WALTER TAYLOR, Saranac Lake, N.Y.	"Porcelain Staining for Personalized Restoration"
MAJOR G. C. EVANS, Ottawa	"Hydrocolloid in Crown and Bridge"
MAJOR H. W. HART, Ottawa	"Intermaxillary Relations and Registrations in Complete Denture Prosthesis"
DR. ROBERTA DUNDASS, Montreal	"Caries Activities Tests"
DR. J. ROACH, Montreal	"X-Ray Technique"
DR. ISRAEL, Montreal	"Root Canal"
DRS. AMBROSE and RYAN, Montreal	"Airbrasive Technique"
DR. HILLARD R. NEVIN, Brooklyn, N.Y.	"Anaesthesia"
DR. A. H. CRAVEN, Montreal	"Early Diagnosis and Treatment of Malocclusion"
DR. ALBERT LEFERRIERE, Montreal	"Use of Splints in Alveolar and Mouth Rehabilitation"
DR. CHAS. ASSELIN, Montreal	"Hydrocolloids and Gold Inlays"

REGISTRATION

Cheques or money order for registration fee of \$15.00 should be made payable to The Montreal Dental Club and mailed to Dr. D. B. Ward, Joint Convention Committee Secretary, Suite 309, 1414 Drummond Street, Montreal, Que., together with requests for hotel reservations.

LADIES' PROGRAMME

SUNDAY, OCTOBER 18th.

9.00 P.M.—Evening musicale.

MONDAY, OCTOBER 19th.

9.00 to 1.00 P.M.—Registration, Cartier Room, Mount Royal Hotel.

11.00-12.30 P.M.—Coffee Party in the Cartier Room.

4.00 P.M.—Civic Reception and Tea at the Chalet on top of Mount Royal.

TUESDAY, OCTOBER 20th.

1.30 P.M.—Tour of points of interest of the University of Montreal; Reception.

7.00 P.M.—Presidents Dinner and Dance, Ball Room, Windsor Hotel.

WEDNESDAY, OCTOBER 21st.

10.00 A.M.—Bus trip to the beautiful Laurentians, stopping for Lunch at the Alpine Inn.

Ladies' Committee: Mrs. Gustave Ratté, Quebec, Que., Chairman.

Mrs. Johnston Abraham, Montreal, Co-chairman.

ANNOUNCEMENTS

● **THE MONTREAL ALUMNI CHAPTER** will have a "Hospitality Room" for the members of the Alpha Omega Fraternity in the Mount Royal Hotel for the duration of the Joint Meeting of the Canadian Dental Association—Montreal Fall Clinic being held in Montreal October 18th to 21st, 1953.

● **GOLF MEET. C.D.A.-M.D.C. MEETING IN MONTREAL.** Facilities for golf will be arranged for all interested at a nationally known course for Sunday, Monday and Tuesday (Oct. 18-20). Attested score-card will be handed in and the cups presented at the Montreal Dental Club Luncheon on Wednesday, 21st of October.

● **NUTRITION PHOTOGRAPH CONTEST.** The Nutrition Division of the Dept. of National Health and Welfare is sponsoring a nutrition photograph contest. This contest is now open and will run until November 30th, 1953. Because of the relationship between nutrition and dental health it is possible that some dentists may be participating in a nutrition project which they would like to enter in this contest. Rules are obtainable from the Nutrition Division, Dept. National Health & Welfare, Ottawa.

● **C.D.A. PENSION-ASSURANCE PLAN.** The Pension-Assurance Plan hitherto available to members in nine provinces, but not the Province of Quebec, will now be available through special arrangements to the Members of the C.D.A. living in that Province. Enquiries should be addressed simply to—

Mr. E. L. R. Williamson,
Post Office Box 70,
Brockville, Ont.

● **NORTHERN ONTARIO DENTAL ASSOCIATION CONVENTION** will be held in New Liskeard on September 11 and 12. Clinicians for the Meeting are Dr. George C. Hare and Dr. Edward R. Bliley.

● The **MARITIME DENTAL CONVENTION** is to be held at Keltic Lodge, Ingonish Beach, N.S., Sept. 3-5, 1953.

● **AMERICAN DENTAL ASSOCIATION CONVENTION** at Cleveland, Ohio, September 28 to October 1.

● **10th ANNIVERSARY MEETING OF THE AMERICAN INSTITUTE OF DENTAL MEDICINE,** Palm Springs, California, October 25-29. For information apply to the Executive Secretary, 2240 Channing Way, Berkeley 4, California.

● **UNIVERSITY OF TORONTO DENTAL ALUMNI ASSOCIATION** Annual Meeting Dinner and Dance, Friday, October 16, Homecoming week-end.

● **EASTERN ONTARIO DENTAL ASSOCIATION CONVENTION** will be held at Chateau Laurier Hotel, Ottawa, September 20, 21, 22.

● The **SECOND INTERNATIONAL DENTAL CONGRESS** in Mexico City sponsored by the Mexican Dental Association, will be held Nov. 15-21, 1953.

UNIVERSITY OF TORONTO, FACULTY OF DENTISTRY CONTINUATION COURSES FOR GRADUATES IN DENTISTRY

ANATOMY AS APPLIED TO DENTISTRY—September 14-16, 1953. 9.00 a.m.—5.00 p.m. Enrolment limit 6. Fee \$50.00.

PAEDODONTICS—November 23-25, 1953. 9.00 a.m.—5.00 p.m. Enrolment limit 12. Fee \$50.00.

DENTAL RADIOLOGY—November 30-December 4, 1953. 9.00 a.m.—5.00 p.m. Enrolment limit 12. Fee \$75.00.

PERIODONTICS—January 18-22, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 14. Fee \$75.00.

OPERATIVE DENTISTRY—February 15-19, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 10. Fee \$75.00.

ENDODONTICS—March 8-12, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 8. Fee \$75.00.

ORTHODONTICS (for the general practitioner)—April 5-9, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 10. Fee \$75.00.

PERIODONTICS—April 26-30, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 14. Fee \$75.00.

DENTAL ORAL SURGERY AND ANAESTHESIA—May 3-7, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 12. Fee \$75.00.

Please address inquiries to: The Dean, Faculty of Dentistry, University of Toronto, 230 College Street, Toronto 2-B, Ontario.



Editor

Wesley J. Dunn, Toronto

Associate Editors

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George Mallam, St. John's

PRINCE EDWARD ISLAND:

D. T. Waye, Charlottetown

NOVA SCOTIA:

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ALBERTA:

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SASKATCHEWAN:

L. D. Haselton, Saskatoon

BRITISH COLUMBIA:

D. Hugh Munro,
Vancouver

Editorial

A NEW OPPORTUNITY

For the second time in three years we find ourselves in the rather unenviable position of becoming the successor to a man who, by his knowledge, his understanding, his sincerity, and his devotion to his profession, has contributed immeasurably to the advancement of that profession. In 1950 we had the great privilege of becoming editor of *Oral Health* following the death of Dr. Thomas Cowling, an outstanding scholar and dental teacher. Now in 1953, we are again privileged to succeed a man of great stature, Dr. M. H. Garvin, who as a past President of the Canadian Dental Association, and Editor-in-Chief of the *Journal* since its inception in 1935 has given of his time and talents for the benefit of all of us. It is difficult to appreciate the attending problems in the early years of the development of this publication. That these difficulties were so ably overcome and the *Journal* is now regarded as one of the world's leading dental periodicals is a fact that will remain eternally to the credit of Dr. Garvin and those with whom he was associated.

Whenever a change in editorship occurs within a publication, there cannot help but be invoked slight variations in the accepted format. Any journal demonstrates to a certain extent the ideas and personality of its editor. Just as two artists will study the same scene and their depictions on canvas may vary considerably, so too will editors vary in their presentations. It is our sincere hope that our view of dental journalism will be acceptable to our readers.

Basically, the object of any publication of a Dental Organization should be the elevation of the profession by informing the members of the association of the scientific, social and economic developments which affect the health and welfare of the people it serves. This will be our aim and endeavour as we attempt to continue the editorship of this journal.

A MATTER OF CONCERN

An occurrence of more than casual interest in Newfoundland should be considered with great concern by the remaining Provinces. Recently, the Newfoundland Dental Board was overruled in its decision not to grant a licence to a woman dentist from Latvia by the Minister of Health of that province. In April this dentist presented her credentials, and two days later the Dental Board replied to her application with a letter stating that after due consideration the Board found it impossible to assess her qualifications from the evidence submitted and suggested that she have her papers approved by one of the University Dental Faculties. The Board assured her that if approval of her qualifications were obtained that it would be pleased to accept her for examination according to the Newfoundland Act.

The Latvian Dentist then took her case to the Premier who instructed the Minister of Health to invoke section 12 of the Newfoundland Dental Act, which provides that: "If any applicant for registration is dissatisfied with the decision of the Board he may appeal to the Commissioner (now Minister of Health) who is hereby empowered to affirm, alter in any way, or reverse the decision of the Board, and the Board shall forthwith give effect to such decision or appeal".

It takes little thought to perceive the possible dire consequences of such a move on the Minister's behalf. When the Board threatened to resign following this reversal, legislation was immediately passed to turn over to the Minister of Health sufficient powers to assume normal Board activities. When such a condition exists it is entirely possible for one having no association with the profession to decide upon the requisite qualifications for licensing within the province. Ostensibly, the minister could even decide upon who has the necessary attributes for specialist certification as well.

It is extremely unfortunate that there exist public servants with no more foresight than to believe the way of increasing dental personnel is to license unqualified persons. While it is granted that in Newfoundland a serious shortage of dentists exists, at the present time a larger number of Newfoundland students are enrolled in Dental Schools than at any time in the province's history. It is a matter for conjecture whether or not such students upon graduation would consider returning to a province, the government of which gives so little consideration to basic dental standards.

From the aspect of the general public, it is extremely dangerous to make

available personnel who are sub-standard in respect to minimal dental requirements.

If the Government of Newfoundland is really interested in increasing the number of practising dentists, it could surely evolve a plan of assistance to these European dentists to allow them to continue to study and at least meet the minimal requirements expected of Canadian graduates. This assistance would of course be dependent upon the return to practice in Newfoundland and the repayment of the original grant-in-aid.

This dictatorial act by the Minister of Health of Newfoundland, should be noted with concern by the profession and thought should be given to any possible like situations in other provinces.

CORRESPONDENCE

TO THE EDITOR.

Dear Sir,

I wish to comment on a statement on page 179 of the April, 1953 issue. Rovelstad, G. H., in "The Dentists' Responsibility to the Child Patient" quotes from Gruebbel, A. O., "Dental Public Health Service in New Zealand." J.A.D.A. 40: 275, 1950, as follows, "... in New Zealand, where 60 per cent of the children 9-14 years of age were in such deplorable condition that their permanent teeth were beyond saving". As I knew this statement to be incorrect, I tried to look up the reference. Page 275 of volume 41 of the J.A.D.A. was the first page of the Gruebbel Report as published in the September issue of 1950. When the words quoted could not be found in the September issue, I moved on to the October issue because, although there was nothing to indicate that the Report would be continued in the October issue and, in fact, the last paragraphs in the September issue are headed "Conclusions", I knew that the Report had been published in three parts. On page 423 of the October issue, in discussing the origin of the New Zealand School Dental Service, Gruebbel states, "A number of other articles appeared in the New Zealand Dental Journal in 1906 which described 'the appalling conditions of the teeth of children 9-14 years of age, more than 60 per cent of whose permanent teeth were beyond saving.'"

As the significant words were in italics in Gruebbel's Report, I presumed they were a quotation. However, a careful search of the

New Zealand Dental Journal of 1906 failed to reveal any such statement. The only statement bearing any resemblance is found on page 14 of the January, 1906 issue in which Thompson describes the dental condition of 106 children in one school. In the course of his description, he states, "By immediate attention, the teeth of about 40 per cent of the children could be easily saved; the rest were too far gone to admit of really satisfactory treatment of a conservative character."

Because I had the local knowledge necessary to recognise a statement which was palpably false, and because I had access to the New Zealand Dental Journal of 1906, I was able, by wasting a lot of my time, to track down a statement which was published as a fact, only to find that it was an unjustified inference from an opinion expressed nearly fifty years ago by a dentist who was trying to draw attention to the need for better dental treatment for children. The position, as I have outlined it, shows a grave lack of scientific responsibility. Editors and readers are entitled to assume that authors go back to original sources and read the articles from which they are quoting so that a statement removed from its context does not give a false impression.

I would be glad if you would publish this, otherwise someone may quote Rovelstad as authority for the statement that 60% of the children 9-14 years of age are wearing full upper and lower dentures!

Yours sincerely,

W. M. CUNNINGHAM, B.D.S. (N.Z.)
D.D.S. (Toronto)

Paradoxes are truths standing on their heads in order to attract attention.—Chester-ton.

ROYAL CANADIAN DENTAL CORPS NEWS

At the Annual Luncheon of the Ontario Branch of the R.C.D.C. Association, held at the Royal York Hotel, on Wednesday, May 20, 1953, Colonel C. L. Strachan, on behalf of the Officers of 1st Divisional Dental Coy. C.A.S.F., presented to Lieut.-Col. W. G. Trelford the

"Trelford Trophy." This trophy is a hand-chased, hall-marked silver flared bowl of the Royal Canadian Dental Corps. Height 7", Diameter 10". It is mounted on a heavy circular base of light onyx.

Lieut.-Col. Trelford in accepting the



Lt-Col. W. G. Trelford presenting the "Trelford Trophy" to Brig. E. M. Wansbrough at the Royal York Hotel on May 20, 1953.

trophy recounted some of the experiences and vicissitudes of commanding a dental unit overseas in the early days of the war. He stated that he was greatly complimented and honoured by this presentation. At the close of his address, Lieut.-Col. Trelford presented the trophy to Brigadier E. M. Wansbrough, Director-General Dental Services, Royal Canadian Dental Corps. Brigadier Wansbrough expressed his gratitude for such an elegant trophy and for the manifest interest in the R.C.D.C. exhibited by ex-members of the Corps. He gave a brief resumé of the developments in the Corps since the war, and undertook to have the terms of a competition for the trophy drawn up, which would stimulate efficiency and interest in the training program of the Reserve Force. Dr. K. I. Levinson acted as Chairman of the Meeting.

Lieut.-Col. W. E. Meldrum, O.B.E., C.D., has been promoted to the rank of Colonel and appointed Senior Consultant at the Directorate of Dental Services, A.H.Q.

Colonel Meldrum was born in Morrisburg, Ont. He graduated from the University of Toronto in 1923 and practised in Ottawa. He served in the R.C.N.V.R. during the First World War and was Flag Lieutenant to the Admiral Superintendent, H.M.C. Dockyard, Halifax. He was appointed to the Canadian Dental Corps in November 1939 and served as D.D.D.S. (Navy) from early 1942 until 1949. He was then appointed Command Dental Officer in Atlantic Coast and Eastern Commands, filling this appointment until August 1952 when he became Commandant of the R.C.D.C. School at Ottawa, where he served until his present appointment.

Major A. C. Leman, 40, has been promoted to the rank of Lieutenant-Colonel. Lieut.-Col. Leman was born in Toronto, Ont.

Educated at Toronto, he is a graduate in dentistry from the University of Toronto. He was appointed to the C.D.C.

May 1940. Prior to proceeding overseas in 1942, he served as a dental officer with the R.C.A.F. at Trenton and Mountain View, Ont. He saw service overseas in various parts of the United Kingdom and Northwest Europe with several components of the Canadian Army. He returned to Canada in 1945, and has since served in the North West Air Command and on the North West Highway System. Lieut.-Col. Leman is currently serving on the dental staff at Camp Borden.

Lieut.-Col. W. R. Cunningham departed by air for Europe on 23rd June to take command of No. 35 Field Dental Company.

Lieut.-Col. S. K. Oldfield relinquished the appointment of Chief Instructor, the R.C.D.C. School, on 30th June to assume the appointment of Senior Consultant, No. 12 Coy. Halifax, N.S.

Captains H. A. Ferguson, and L. R. Pierce have been promoted to the rank of Major.

Major Ferguson, 29, was born in Toronto, Ont. He served in the R.C.A.F. 1943 to 1945 retiring with the rank of Pilot Officer. Major Ferguson attended the Faculty of Dentistry, University of Toronto and as an undergraduate was appointed 2nd Lieut. in the R.C.D.C. in September 1948. On graduation in 1949, he was appointed Captain and has served in Ontario and the Far East. Major Ferguson is currently attached to No. 13 Coy. and is serving in Trenton, Ont.

Major Pierce, 32, was born in Aylmer, Ont. He saw service in the C.D.C. from April 1942 to September 1945, and was discharged with the rank of Sergeant. Major Pierce attended the Faculty of Dentistry, University of Toronto and as an undergraduate was appointed 2nd. Lieut. R.C.D.C. in September 1948. On graduation, he was appointed Captain July 1949. Major Pierce has served in Ontario and the Far East, returning to Canada in April 1953. He is currently serving with No. 13 Coy. posted at London, Ont.

CANADIAN DENTAL ASSOCIATION NEWS

FROM THE OFFICE OF THE SECRETARY

Reduced Air Fares for Annual Meeting

Arrangements have been completed for reduced air fares to the Annual Meeting.

The following rules apply:

1. Reduced air travel rates over T.C.A. Routes *within Canada* are offered to bona-fide members of the Canadian Den-

tal Association for the purpose of attending the Annual Meeting of the C.D.A. at Montreal. Dependent members of their families are also allowed similar discounts providing they are travelling at the same time and on a similar itinerary.

2. One-way tickets are reduced to 90%

of the normal one-way fare while round-trip tickets are reduced to 160% of the normal one-way fare.

3. Stop-overs are permissible on both the going and return journeys. The valid expiry date of the ticket is set at four months from date of issue.

4. Travel to the Meeting on a one-way or round-trip ticket must commence within 15 days prior to the last day of the Convention.

5. In order to ensure that only authorized persons will be allowed the benefit of reduced rates identification certificates must be secured in order to purchase tickets at reduced rates.

Dr. H. J. Merkeley becomes first president National Dental Examining Board: At the initial meeting of the Representatives to the National Dental Examining Board, Dr. H. J. Merkeley of Winnipeg, Past-President of the C.D.A., was elected President. The meeting was held at C.D.A. Headquarters Toronto on June 29th and 30th last.

Other officers elected were:

Vice President: Dr. William Miller, Vancouver.

Registrar-Secretary: Dr. H. N. B. Beach, Ottawa.

Executive: Dr. R. J. Godfrey, Toronto; Dr. A. G. Racey, Montreal; Dr. J. F. Edgecombe, St. John, N.B.

The headquarters of the new Board will be at Ottawa. All correspondence relating to the Board should be addressed to:

Dr. H. N. B. Beach, Secretary, National Dental Examining Board, 150 Metcalfe Street, Ottawa, Ontario.

The N.D.E.B. was established by federal statute in June 1953. Since that time the work of organizing the new Board has been proceeded with and the first examination will be held in the spring of 1954. The successful candidates who take this examination will receive a certificate which may be registered in any Canadian province for the securing of a licence to practise.

Executive Announces Locations for Annual Meetings: At the June Meeting of the Executive the locations for the 1955 and 1956 Meetings were adopted.

1955—May—At Toronto in cooperation with the Ontario Dental Association.

1956—June—At Banff in cooperation with the Alberta Dental Association.

The 1954 Meeting is to be held at St. Andrews-by-the-Sea, N.B., Sept. 1st to 8th, in cooperation with the New Brunswick Dental Association. The Meeting this year is in Montreal, October 14th to 17th Board of Governors

and October 18th to 21st Convention, in cooperation with the Montreal Fall Clinic.

World Health Organization Institutes Dental Program: Through the International Dental Federation effort has been made toward the establishment of a dental division in W. H. O. by the appointment of a Dental Consultant on a permanent basis. At the Sixth World Health Assembly held at Geneva, Switzerland, May 5th to 23rd last the F.D.I. was represented by Dr. A. E. Rowlett and Dr. G. H. Leatherman with the result that the following resolution was adopted:

"Considering that the Fourth World Health Assembly recommended that the Director General Study the possibility of setting up a programme in dentistry and considering that the exploration of this particular field has gone forward for several years.

1. Recommends that the Director General include provision for a programme in dentistry in his programme and budget for 1955 as far as financial possibilities will allow; and

2. Thanks the International Dental Federation for its continued cooperation."

In addition, provision has been made in the programme and budget of W.H.O. for 1954, for two studies with a direct relation to dental health; one on the relation of sugar intake to dental decay, the other a study on the prophylaxis of dental caries with fluorides.

These projects have significance in that the importance of dental health is fully recognized by W.H.O.

NEWS BRIEFS—

The Council of the College of Dental Surgeons of the Province of Quebec recently increased the annual fee from \$35.00 to \$75.00.

The C.D.A. Council on Dental Education has announced that the Survey Team will visit the Canadian Dental Schools during the forthcoming academic year.

The western universities have called a meeting of representatives of provincial Departments of Health and of Education, the Federal Department of National Health and Welfare, and the provincial dental associations. The purpose of the meeting is to consider the problems of dental education in Western Canada. The Canadian Dental Association has been invited to send representatives.

NEWS FROM THE PROVINCES

SASKATCHEWAN

Dr. J. E. MacDiarmid, was elected president of the Regina District Dental Society, at its final meeting of the season. Other officers elected were:

Dr. F. W. Wihak, vice-president; Dr. D. Parker, secretary, Dr. B. J. Koenig, treasurer.

ALBERTA

Portraits of two men termed the founders of the faculty of dentistry at the University of Alberta, Dr. H. E. Bulyea and Dr. H. A. Gilchrist, were presented to the University by the Dental Alumni Group. The portraits were painted by H. G. Glyee. Dr. Bulyea graduated from Harvard University in 1897 but did not commence practice in Edmonton until 1915. With the opening of the dental faculty at the University of Alberta in 1919, he became a lecturer in several courses, and later became a director of the department in 1922. From then, until retirement in 1942 he continued as a lecturer and was named professor-emeritus of operative dentistry. In 1948 he was made an Honorary Member of Edmonton and District Dental Society.

Dr. Gilchrist graduated from the Northwestern University Dental Faculty in 1902 and remained on its staff for several years before entering private practice. He practised in Lethbridge and Calgary, before moving to Edmonton in 1919 to join the University of Alberta dental staff. Dr. Gilchrist became head of the prosthetic department in 1921 and was made professor shortly thereafter. Upon retirement in 1945 he was made an honorary professor.

Dr. Gilchrist was elected a Fellow of the American College of Dentists in 1938 and was made an Honorary member of the Edmonton Dental Society in 1948.

NOVA SCOTIA

The Halifax County Dental Society: The proposed fluoridation of Halifax's water supply was endorsed by the annual Business Meeting of the Halifax County Dental Society, held at the Nova Scotian Hotel recently.

In supporting the project the session expressed hope that it would be in effect before the time of another annual meeting.

Dr. John B. Hardie, guest speaker at the annual dinner, spoke on "The Service of the Professions" in which he emphasized the duty a professional man has to society in addition to the services he

renders. Officers elected at the session were:

President, Dr. K. M. Kerr, Bedford; vice-president, Dr. W. H. MacNeil, Halifax; secretary-treasurer, Dr. W. D. Coleman, Halifax; executive member, Dr. Raymond Epstein, Dartmouth; auditor, Dr. Earl Dexter, Halifax. The immediate past-president, Dr. John Merritt, presided at the meeting.

PRINCE EDWARD ISLAND

Dr. A. L. MacIsaac of Charlottetown was elected president of the Dental Association of Prince Edward Island, at its annual meeting, held in Charlottetown recently. Other officers elected were—Vice-president, Dr. R. L. Noonan, Summerside; secretary-registrar-treasurer, Dr. Heath McIntyre, Charlottetown; members of the Council, Dr. J. D. Reddin, Mount Stewart; Dr. K. A. MacEachern, Charlottetown.

MANITOBA

About 15 members of the Manitoba Dental Association were in attendance at the Jasper meeting of the Western Canada Dental Society which was held on June 15-18. They and their women folk were enthusiastic of the mountain setting and the new buildings and are still quite sure it was worth going to and thankful they did not miss it. That is the spirit that repays the committees in charge of such a gathering and make others willing to work in like fashion when they are called upon.

One of the interesting events of the convention was the honour done Dr. Harry Garvin by making him the first honorary life member of the Society. No dentist in Canada has done more to build up the ethical standards of the dental profession provincially, nationally, and in western Canada. In honouring Dr. Garvin the Western Canada Dental Society honours itself in selecting his name for its first life membership.

Dr. W. J. Riley of Winnipeg was elected as first vice-president.

Another Manitoban, Dr. H. J. Merkeley, of Winnipeg, has been made the president of the newly organized National Dental Examining Board. Dr. Merkeley has been president of the Western Canada Dental Society, and the Canadian Dental Association. The new Board is fortunate to begin functioning under the guidance of so experienced a chairman as Dr. Merkeley.

J.F.M.



EXECUTIVE—WESTERN CANADA DENTAL SOCIETY

l. to r. Dr. H. K. Martin, Regina, Secretary; Dr. John Clay, Calgary, Past President; Dr. H. J. Riley, Winnipeg, 1st Vice-President; Dr. L. D. Haselton, Saskatoon, President; Dr. J. C. Hard, Edmonton, 2nd Vice-President

ONTARIO

Dr. G. T. Milne was elected president of the **Lambton County Dental Society** at the annual meeting at the Sarnia Golf Club. Elected were—vice-president, Dr. W. R. Fletcher; secretary, Dr. M. Pearlman; treasurer, Dr. L. B. Brunton. The outgoing president, Dr. D. W. Duncan of Petrolia presided at the business meeting. Dr. K. J. Ryan of Flint, Michigan was the guest speaker for the evening and he chose as his topic, "Dental Economics."

The Essex County Dental Association recently held its annual meeting at which

time the following officers were elected: Dr. A. L. Cook, president; Dr. Jack Fuller, first vice-president; Dr. J. D. McLean, second vice-president; and Dr. Ted Wachna, secretary-treasurer.

The fourth and fifth dinner meetings of the **Sudbury and District Dental Society** were held in the Legion Memorial Hall on April 22nd and June 24th respectively.

At the fourth dinner meeting Dr. Gordon Johnston, well known operative dentistry clinician of the Faculty of Dentistry, Toronto, gave two clinics on dental amalgam restorations. The afternoon session was a review of cavity prep-

arations for silver amalgam restoration. The use of well-prepared coloured slides in the afternoon clinic was a great aid to the society members. The evening session was primarily a discussion and application of dental amalgam restorations. Proper restorations of manikin teeth with silver amalgam materials and the proper use of matrices, where indicated, were the highlights of the evening session.

On June 24 the Sudbury and District Dental Society members had the pleasure of attending a clinic given by Dr. W. Ross, Professor of Operative Dentistry, Toronto. Dr. I. Polack introduced the speaker.

The clinic was a digest of helpful aids and tips that Dr. Ross has accumulated over a period of 25 years of dental practice. The very worthwhile clinic was well illustrated by the use of models and coloured slides.

G.P.C.

The Toronto Study Club of Dental Technicians held its annual dinner on April 21, at the Chez Paree Restaurant. There was a very good turnout of 52 members and guests.

Refreshments were served early in the evening, and after dinner a very interesting and educational talk on the Toronto Stock Exchange and its functions, was presented by Mr. W. L. Somerville, the assistant manager of the Exchange. Much was learned by the members of the workings of a stock exchange.

There also was a business meeting to elect a new president and officers for the ensuing year.

Mr. C. Watters of Hamilton, was elected president with the support of the following members:—

Immediate Past President . . . C. Goodall
Vice-President J. Washbrook
Secretary Sam Sweet
Recording Secretary . . Keith McKanday
Treasurer C. Blandford
Sergeant-at-Arms Joe Ryan
Congratulations and Condolences—

. Geoff. Tebbutt

Executive: Ken Beatty; Bus Brown; Ken Mellish; Don Ley; Perc Singer; Bill Spence; Lloyd Raven; Ken Daly; and Gord Wilson.

At the close of the evening, Mr. C. Goodall, the retiring president, and his executive, were congratulated for the splendid way they had conducted the affairs of the club for the past year.

L.A.R.

QUEBEC

McGill University — Presentation to Miss Anne Ferguson: A tea in honour of Miss Anne Ferguson was held in the ball-

room of the Faculty Club on May 14th, 1953. This celebration was an intimate recognition by the present and former members of the teaching staff, of the efficient and conscientious service rendered for over twenty-five years by Miss Ferguson as Executive Secretary of the Faculty of Dentistry. Former Dean Arthur Walsh, on behalf of the Teaching Staff, presented Miss Ferguson with a purse and a cheque. Miss Ferguson is to continue in her present position to the great satisfaction of the Faculty.

Canadian Dental Association Golf Meet: Competition for the Canadian Dental Association Golf Cups will be held at the time of the Joint Meeting of the Canadian Dental Association and the Annual Montreal Fall Clinic, under the auspices of The College of Dental Surgeons, P.Q. to be held in Montreal, October 18-19-20-21, 1953. Dr. Donigan, the Convention Committee Chairman has announced that facilities for golf will be arranged for all interested at a nationally known course for Sunday, Monday and Tuesday (October 18-20). Attested score cards will be handed in and the cups presented at The Montreal Dental Club Luncheon on Wednesday 2st October.

The secretary of the **Montreal Alumni Chapter of the Alpha Omega Fraternity** has announced that a "Hospitality Room" has been obtained in the Mount Royal Hotel during the coming Canadian Dental Association—Montreal Dental Club Annual Fall Clinic Joint Meeting to be held in Montreal October 18, 19, 20 and 21, 1953. Dr. Caplan states that "the purpose of the room is to welcome Alpha Omega members and their families to Montreal, as well as to help them find their way around the city during their stay here."

Excellent weather during the daytime combined with pleasant relaxation at night made the **Montreal Dental Club's** Annual Golf outing an enjoyable affair for the close to 30 members taking advantage of the Knowlton Golf Club's hospitality on the week-end of June 20th.

The famed Knowlton course overlooks Brome Lake in the Eastern Townships has proved such a drawing card in recent years that most of those attending have been arriving well before the start of the official week-end and staying through until the Brome Lake duck dinner Sunday noon.

Roy Dohn copped the low gross honours for the second straight year with Frank Edwards picking up the second place silverware. Doug Armstrong

won the low net with Alton Burbank and Les Gill tying for second low net. The play off on the illuminated putting green at 11 p.m. Saturday night between these two still left it a draw but was one of the high points of the week-ends' golf display.

A large measure of the week-end's success was due to John MacDonald's flair for organization.

BRITISH COLUMBIA

As a public health service the **B.C. Dental Association** has been publishing articles at irregular intervals in the *Vancouver Daily Province*. These articles appear under the caption "Your Dentist," and are being written by Dr. Leslie Robinson, former B.C. editor of the *Journal*. They are worded to appeal to the layman. In a footnote the public are requested to ask questions on dental health, addressing their queries to the association office.

After a year of meetings devoted to technical subjects, the two larger dental societies in British Columbia ended the season in lighter vein. The last meeting of the **Victoria Dental Society**, held in May, was preceded by a cocktail party. Election of officers for the coming season resulted as follows:—

President Dr. J. L. Magrath
Vice-President Dr. S. F. Miles
Secretary Dr. A. Daysmith
Treasurer Dr. C. B. Jameson
Executive Members—

Drs. R. L. Horne and A. P. Salter
The **Vancouver and District Dental Society** at its May meeting relaxed and listened to a layman talk on "Big Fish and Where to Catch Them." The retiring president, Dr. John Wark, reported that there had been eight monthly meetings attended usually by nearly 200 men; there were also eight executive meetings to arrange for the meetings, which usually included afternoon clinics. The society has been working all year on a project to provide study club headquarters, which will in all probability be set up in the near future. Study clubs play an extremely important role, and

it is really a pleasure to state that in Vancouver so many of the younger men are enrolling in this most important aspect of their dental education.

Officers elected for the ensuing year are: President, Dr. George Creasy; President-elect, Dr. D. H. Warren; Secretary, Dr. W. P. Munsie; Directors, Drs. R. E. Cline, R. J. O'Neil, M. Nacht and C. M. Witworth.

The annual spring tournament of the Vancouver and District Dental Society was held at the Burquitlam Golf Course. Dr. Dick Butler of New Westminster, in charge of the affair, reported an excellent turnout in spite of a threatening visit from Jupiter Pluvius (who suspended activities until the playing was over). There were new champions in all events—which is good for the morale of the golfers. It seems that anyone can win. Fifty turned out to test their fate, and space permits us to say only that among 17 prizes the top winners were:

Leach Trophy (low gross): Dr. M. J. Waterman.

Century Cup (donated by B.C. Dental Supply Co. for runner-up low gross): Dr. A. H. L. Campbell.

Ash Temple Cup (low net): Dr. J. A. Chambers.

The **Fraser Valley Dental Society** is one of our organizations which did not relax, however. At its May meeting Dr. L. W. Beamish of New Westminster gave an excellent chair clinic on the setting and finishing of a gold inlay.

The inevitable elections took place and these officers were chosen:

President, Dr. W. E. Shaw, Mission.
Secretary, Dr. D. K. Stratton, Mission.
District Chairman—

Dr. D. D. Voght, Chilliwack
Dr. A. W. Patterson, Abbotsford
Dr. A. D. MacPherson, White Rock

British Columbia was represented by 45 men at the recent Western Canada Dental Convention held at Jasper. Members of the Vancouver Pedodontic Study Club who presented table clinics were: D. B. McDonald, O. F. Wright, A. A. Fraser, R. I. Yorsh.

D.H.M.

BRITISH COMMONWEALTH NEWS

British Dental Journal Appoints New Editor:—The Council of the British Dental Association has appointed Mr. L. J. Godden, L.D.S., (Eng.), to succeed Mr. Bryan J. Wood, as editor of the *British Dental Journal*. Mr. Godden qualified from Guy's in 1922 and brings to his new office a wide experience of practice in

hospitals, clinics and private practice. In addition, he is well versed in dental affairs, having been for some years a member of the representative board and of the council of the Metropolitan Branch of the British Dental Association, of which he was president in 1952. The new editor has already had experience in the

problems of dental journalism, having been editor of the "Dental Record" for the past seven years.

For the first time the President of

India has made appointments on his personal staff of Honorary Dental Surgeons. The two men so honoured are: — Dr. N. N. Bery, New Delhi, and Dr. M. L. Soni, also of New Delhi.

GENERAL NEWS



Presented to the American Association of Dental Schools by the Canadian Dental faculties, March 23, 1953

Dr. Ernest Charron, dean of the **Faculty of Dentistry, University of Montreal** presented the accompanying gavel and sounding board to the American Association of Dental Schools at their annual meeting last March. The presentation was made on behalf of the five Canadian Dental faculties. The items were carved out of walnut by Mr. Eldon Cox. The gavel is adorned with a Maple leaf as symbolic of Canada and this is surrounded by a number of stars representing United States.

Dr. Charron made the presentation in his own inimitable polished style and the gift was received by the Association's President Dean Wendell D. Pastle with appreciative acknowledgement.

Following are the names of the successful candidates of this Spring's exami-

nations of the **Dental Council of Canada:** Abrahams, Edward Julian; Bean, Herbert L.; Belliveau, Thomas Edwin; Birk, Richard Roland; Blackmer, John Bigson; Buchanan, David M.; Calhoun, Anders Venor; Chappell, David Lloyd; Clark, Glen Donald; Cole, Edgar N.; Coupland, James George; Cowan, John Robert; Curtis, George Buffet; Dawson, Delmar Goodwin; Donohue, Edward Wm. Beaugrand; Eidinger, Martin; Faulkner, Guy Herbert; Fedirko, Nicholas Reginald; Frank, Alexander Sandor; Gornitsky, Marvyn; Grant, Vincent; Hauck, Donald Engelbert; Higa, Jack; Hudyma, Walter; Jansen, Gerhard Heinrich; Jarjour, Edward G.; Jarjour, Wilfrid George; Koziar, Appolenarie Orest; Koziar, Edwin Leonid; Krawchuk, Theodore; Linklater, Donald Marshall; MacConnachie, Hugh John; MacKenzie, Albert Gordon; MacLachlin, Dugald Edgar; Maclean, Margaret Winnifred;

Miller, Robert James; Mills, John Thomas; Moran, Charles Leo; Mullen, Ronald Perry; Oldham, Margaret Patricia; Pelton, Henry Robert; Pierce, Frank Lawrence; Poole, Donald A.; Pourbaix, John Myles; Poznansky, Jacob B.; Pugh, Clayton R.; Rapp, Robert; Robinson, John Bruce; Romcke, Robert George; Rosen, Harry; Schneider, Frederick Roy; Sprott, Wimmiam Lawrence; Star, Isidore; Varey, John James; Zacharin, David; Zmetana, John.

Dr. Teuscher Named Dean of Northwestern University Dental School: Dr. George W. Teuscher, professor of paedodontics at the dental school, Northwestern University has been appointed dean of the dental school. Dr. Teuscher succeeds Dr. Charles W. Freeman, dean of the school since 1938, who is retiring to devote full time to teaching. Dr. Freeman will remain on the faculty as professor of dental surgery. Dr. Teuscher joined the dental school faculty in 1933, becoming chairman of the department of paedodontics in 1935. He holds four degrees from Northwestern University: D.D.S., 1933; M.S. in dentistry, 1936; M.A., 1940, and Ph.D., 1942, both of the last in education. In addition to serving at the dental school, Dr. Teuscher is clinical assistant in surgery at the university's medical school and is a staff member of Wesley Memorial Hospital. He is a fellow of the American College of Dentists.

U.S. Senate Committee Boosts Dental Appropriations by \$90,000: Appropriations for dental health activities of the U.S. Public Health Service for 1953-54, including research, were restored to the total of \$1,740,000 recommended by President Eisenhower by the Senate Committee on Appropriations. This was \$90,000 higher than the appropriations for dental activities previously approved by the House of Representatives. The action by the Senate committee, which now goes before the full Senate, came after the A.D.A. had strongly protested a reduction in funds for dental research and other dental activities. The increased dental appropriation was included in the appropriation bills for the Department of Health, Education and Welfare for the year beginning July 1. Originally, a budget of \$2,700,000 for dental activities had been submitted to Congress by former President Truman. This was cut to \$1,740,000 in the Eisenhower budget. The House lopped off an additional \$90,000. In voting to restore the House cut, the Senate committee cited fluoridation of

water supplies as an outstanding example of the beneficial results of dental research. The committee report declared: "This (dental) research has been most beneficial, and most spectacular in the finding that minute amounts of fluorides in water will sharply reduce the number of cavities in children's teeth." Noting that most dental research had been done on teeth themselves, the Committee urged that additional research be on a broader basis including not only the teeth but all tissues in the mouth. "This general extension of the scope of dental research is certain to be productive, but it must be stimulated by the provision of more adequate funds for dental research," the report concluded.

New Survey Shows Continuing Increase in Fluoridation of Water throughout Nation; Program now in Operation in 771 Communities:—One out of every nine persons in the United States is routinely drinking water containing a beneficial fluoride content, according to a survey completed recently by the A.D.A. Council on Dental Health. The survey revealed that 14,266,351 persons in 771 communities—a gain of 117 since January 1, 1953—are served by fluoridation programs. Additionally, 3,570,021 individuals live in areas served by water supplies naturally containing desirable amounts of fluorides to bring to a total of 17,836,372 the number of persons in the program or more than 11 per cent of the nation. Results of the survey were based on questionnaires sent to state and territorial health departments. Replies revealed that fluoridation is now in operation in every state but five—Arizona, Missouri, Nevada, New Mexico and Utah. The survey also revealed that the program had been discontinued in only six small communities, Mt. Dora, Fla.; Assumption, Ill.; Williamstown, Mass., and the Wisconsin towns of Elroy, La Crosse and Stevens Point. Fluoridation of local water supplies was first started in six communities in 1945. The number of communities which have adopted the procedure by years since 1945 are as follows: 1946, seven; 1947, four; 1948, seven; 1949, 19; 1950, 39; 1951, 225; 1952, 347; and 1953 (first six months) 117. Maryland leads the nation with 1,545,657 persons residing in 164 communities where local water supplies are fluoridated. Second is California with 1,280,144 residents of six communities routinely drinking fluoridated water. In Pennsylvania, fluoridation is in operation in 37 communities with a population of 903,000. Other areas where fluoridation is in operation for large numbers of per-

sons include: District of Columbia, 890,000 persons; Virginia, 873,830; and Michigan, 859,040.

Tattooing, the sailor's and the circus performer's friend and a method of decorating the body that dates back to 2,000 B.C., is now being used effectively to camouflage deep-seated, port-wine stain birthmarks.

Dr. Herbert Conway, New York plastic surgeon, recently reported to the American Medical Association that "nevus flammeus," the red or purple birthmark caused by abnormal dilation of the capillary blood vessels, which sometimes cover large areas of the neck and face, has been successfully treated by tattooing.

He reports satisfactory results in 83 per cent of cases where the dilated blood vessels lie beneath the dermis or inner true skin. Tattooing is unsatisfactory where the abnormal capillaries are im-

mediately beneath the epidermis or outer layer of skin.

The technique is to inject pigment of natural skin color into the dermis to hide the birthmark. The insoluble pigments are mixed into a thick paste with sterile water, brushed on to the skin and placed in the open end of the barrel on the tattooing needle. A set screw regulates the depth of the needle's penetration, and the needle oscillates at a rate of from 3,000 to 3,500 movements per minute. Treatment is first tried on a small area to determine the correct color of pigment, and then the tattooing is done, four or five square inches at a time at intervals of four weeks until the whole mark is covered. Birthmarks covering half the face may take as many as 20 treatments.

Adults can be treated in this way without anaesthesia and only slight discomfort. It is not recommended for children under eight years of age.

To the Class of 5TI:

I wish to extend my most sincere appreciation to my fellow classmates for their kind and thoughtful generosity during my recent illness, and also for the many letters received. Your contributions have certainly aided in putting me on the road to recovery and I expect now to be able to resume practice within a few months. It has been wonderful to be able to have the observation and treatment that I have had with so little financial worries that usually accompany a session of this kind. Thanks to the class of '51.

My wife joins me in our heartfelt gratitude for the unexpected but definitely heartwarming expressions of your concern.

Wishing each and every one of you the best of health, happiness, and success.

Sincerely,

Frank Croley,
269 1/2 Colborne St.,
Brantford, Ontario.

IN MEMORIAM

Milton Jones died in Vancouver on June 15 at the age of 77. He had retired from active practice a year before his death. Dr. Jones, born in Lynden, Ontario, was a school teacher before attending the R.C.D.S. where he graduated in 1902. He practised in Hamilton and came to Vancouver in 1910.

Throughout his career he took an active part in B.C. dental organizations. He was a member of the Council of the B.C. College of Dental Surgeons for

several years and pioneered in X-Ray and exodontia. He will be remembered especially for having founded the school dental service in Vancouver.

Surviving are his wife, a stepson and his nephew, Dr. Emery Jones, President of the College of Dental Surgeons of B.C.

Hervé Reny of St-Joseph de Beauce, Quebec, died on May 14 at the age of 54 years. Dr. Reny graduated from University of Montreal in 1923. He was a Knight of Columbus and very active in

IN MEMORIAM

all charitable organizations and all Local Dental Societies.

Dr. Reny is survived by his wife and nine children.

•
Hector Charles Banford was born in Lachute, Quebec in 1880 and died on June 2, 1953 in New Westminster, B.C., aged 73. He graduated from the University of Toronto in 1911, came west the same year and began practice in New Westminster. In 1923 he graduated from the International School of Orthodontia in Kansas City, Missouri, and on his return to New Westminster combined the practice of orthodontia with general dentistry.

He is survived by his widow, two sons, one daughter and six grand-children.

•
Robert Morton Riggs, 77, passed away in a Calgary nursing home after a lengthy illness. Dr. Riggs was born in Ontario and came to Alberta in 1919.

He graduated in Chicago and practised there before moving to Calgary in 1921. Dr. Riggs returned east in 1935 and came back to Calgary in 1946.

He is survived by three sisters, Mrs. George Simpson, Clareshom; Mrs. W. C. Bowan, Victoria; and Mrs. Edith Ormiston, Bowmanville, Ontario; and one brother George, Bowmanville.

•
Albert Edward Haynen, a native of Prescott and a practising dentist in Ogdensburg for 55 years, died in Ogdensburg on May 15th as the result of an automobile accident in April.

Dr. Haynen was in his 79th year and received his early education in Prescott schools and later graduated from the Pennsylvania College of Dental Surgery in Philadelphia in 1897.

He is survived by his wife, Bessie and a daughter, Mrs. Dudley VanArnum of Troy.

•
Fred E. Frazer of New Glasgow, N.S. died in May. He was 68 years of age. Dr. Frazer had practised dentistry in New Glasgow for 34 years, following 10 years of practise in Montreal. He is a graduate of McGill University and took his dental degree in Baltimore.

He is survived by his widow, the former Dorothy Morrison of Montreal; two sons, J. Earle, New Glasgow; and Stanley G., with the Canadian Dental Corps at Dartmouth, and one daughter, Grace (Mrs. A. P. Blackburn) of Toronto.

•
Elmore Graham Kemp died in Vancouver, B.C. on April 28, 1953, at the age of 55. He was born in Innisfail, Alberta in 1898, where he lived until he joined the 89th Battalion at the age of 17. He was later transferred to the 50th Battalion and in the Battle of the Somme was wounded and lost a leg. After discharge he joined the first year dentistry class at the University of Alberta and transferred to Toronto, where he graduated in 1922.

He was married in 1925 and practised in Burnaby for ten years. He served as dental officer at Shaughnessy Hospital during the war years. For three years he had an office in Vancouver and then moved to Brighouse where he practised until his death.

He was a lover of horses and had his own breeding farm at Cloverdale, B.C. He was also a sculptor and was expert in the art of wood carving, for which he won the Governor-General's medal. (He made models of his own horses).

He is survived by his wife and three sons.

DIRECTORY

Canadian Dental Association Headquarters—234 St. George Street, Toronto, Ontario.
Matters relating to the publication of manuscripts or news items for the English Section of the Journal should be addressed to the Editor-in-Chief, Dr. Wesley J. Dunn, 234 St. George Street, Toronto, Ont.

Matters relating to the French Section of the Journal should be addressed to the French Editor, Dr. G. de Montigny, 400 est Blvd. St. Joseph, Montreal, P.Q.

Matters relating to the business of the Journal should be addressed to the Business Manager, Dr. Don W. Gullett, 234 St. George Street, Toronto, Ontario.

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AOUT 1953

No 8

Quelques aspects d'hygiène publique sur la fluoruration*

par J. C. BOUILLON, D.D.S., M.P.H., Montréal

Chef des services dentaires, Service de Santé, Montréal

Il y a déjà plus d'un siècle que Shattuck, par son fameux rapport qui dans le temps fit époque, établissait les bases de l'hygiène publique dans le Massachusetts. Depuis lors, beaucoup a été fait pour protéger l'individu contre les maladies épidémiques. Sous l'égide des autorités gouvernementales, le champ d'action de l'hygiène publique se développa rapidement, plus rapidement peut-être que celui des autres services publics, à cause des grands besoins de l'individu de classe moyenne, que l'initiative privée laissée à elle-même ne parvenait pas à satisfaire.

Le concept de l'hygiène publique se précisa rapidement et la disparition graduelle des maladies entériques, transmissibles et contagieuses, grâce à ses programmes de chlorination, de pasteurisation et d'immunisation, ont vite fait d'en établir l'utilité et la nécessité tant au point de vue social qu'économique. La carie dentaire toutefois, par sa prédominance et l'impossibilité d'en définir la cause exacte, échappa à son contrôle.

Toutefois les statistiques qui découlent de plusieurs recherches cliniques révèlent que la fluoration des eaux d'approvisionnement a un effet bienfaisant, et vérifient en quelque sorte une hypothèse énoncée par les premiers chercheurs; et, comme nous le dit si bien A. P. Black, la diminu-

tion de l'incidence de la carie dentaire par ce medium semble devoir être un des faits marquants de l'hygiène publique, non seulement en regard de la génération actuelle mais du siècle même.

De nombreuses recherches épidémiologiques ont démontré qu'il y a une association directe entre la concentration de fluor dans l'eau que l'on boit pendant la période de calcification, et une réduction de 60 à 65% du taux de la carie dentaire.

Il est vrai que la prévention et le contrôle de la carie par une alimentation rationnelle, de bonnes habitudes d'hygiène buccale, un usage plus rationnel des hydrates de carbone et des féculents fut toujours à la base des recherches de la profession. Ces mesures étaient saines et rationnelles; mais à cause de l'insouciance de l'individu lui-même, les résultats n'étaient pas ce que nous étions en droit d'espérer.

LE FLUOR: AGENT CHIMIQUE

Le fluor qui est un des quatre allogènes fut isolé par André Moisan en 1886. C'est un gaz de couleur jaune pâle, légèrement plus lourd que l'air. Il se combine facilement avec la plupart des éléments, sauf l'oxygène et certains gaz rares. Ses composés se trouvent un peu partout dans la nature. On trouve des dépôts commerciaux de fluorure de cal-

*Résumé d'un rapport préparé par l'auteur à la demande du Service de Santé de la Cité de Montréal, en 1952.

cium dans l'Illinois et dans le Kentucky; de cryolite (à base de fluorure de sodium et d'aluminium), en Islande et au Groenland; de fluo-apatite, en Floride, au Tennessee et au Kentucky. Il existe dans le sol, les os et les dents. L'eau de mer en contient 1 ppm. Les statistiques révèlent que 22.3% des approvisionnements d'eau analysés contiennent plus de 0.6 ppm de fluor, sans tenir compte d'un grand nombre d'autres qui en contiennent des traces.

LE FLUOR: SES COMPOSES

Contrairement au chlore employé comme élément, le fluor est employé sous la forme d'un de ses composés. Les produits à base de fluor employés pour la fluoruration sont assez limités. Les seuls qui sont recommandés à date sont: le fluorure de sodium, le fluorosilicate de sodium, l'acide fluoridrique et l'acide fluosilicique. Le fluorure de calcium a été suggéré, mais à cause de son insolubilité, il ne devrait avoir aucun effet biologique. Le fluorure de sodium ayant servi de base aux recherches faites jusqu'ici, est naturellement le produit recommandé; quoique McClure nous assure que le fluorosilicate agit d'une façon identique, puisque, ajouté à une eau ayant un pH de 6.0 ou plus, il est immédiatement transformé en silice colloïdal et en fluorure de sodium.

Il existe cependant d'autres facteurs dont il faut tenir compte en faisant le choix du produit dont on doit se servir:

- 10 Il ne faut pas que cette substance soit dommageable à la santé, même lorsqu'elle est absorbée quotidiennement pendant plusieurs années;
- 20 Ce produit qui, après tout, est un produit commercial, ne doit pas contenir des impuretés qui peuvent être dommageables à la santé;
- 30 On doit pouvoir évaluer facilement ces impuretés, si elles existent;
- 40 Il est nécessaire, lorsque le sel de fluor est ajouté à l'eau, que le

fluor soit libéré pour être converti en ions.

Les recherches et les expériences ont démontré que seul le fluorure de sodium peut remplir ces conditions, quoique le fluorosilicate semble être aussi approprié et de coût moins élevé.

LE FLUOR: ELEMENT DE NUTRITION

Contrairement à ce que l'on est porté à croire, le fluor est un constituant de l'organisme que l'on rencontre en quantité ou proportion minimales mais variables dans tous les aliments de base. L'apport quotidien varie entre 0.19 mlg. à 0.32 mlg. A cause de sa grande affinité pour le calcium, il est naturellement assimilé par les os et les dents. C'est un élément important et nécessaire au métabolisme humain.

Dès 1874, Erhardt, médecin allemand, le recommandait aux femmes en grossesse et aux enfants, sous forme de comprimés, afin de favoriser une denture plus saine et un émail de meilleure qualité. En 1892, Sir James Crichton Browne, devant l'Association dentaire britannique, recommanda la ré-introduction dans la diète alimentaire d'une quantité de fluor sous une forme naturellement assimilable, tel que nous le trouvons dans "les brins d'herbes siliceux et la balle des graminées".

Un rapport de Hempel & Scheffler soumis en 1899 indique qu'une dent saine contient plus de fluor qu'une dent cariée. Tomes et Deninger en 1907 recommandaient le fluorure de calcium comme moyen thérapeutique pour le contrôle de la carie dentaire.

Il ne faut pas oublier que le fluor est un constituant naturel de plus de 75% de nos approvisionnements d'eau, quoique dans 50% de ceux-ci nous n'y relevons que des traces variant entre 0.1 ppm et 0.4 ppm. Il n'a aucun effet thérapeutique et doit être considéré uniquement comme mesure prophylactique pour réduire l'incidence de la carie dentaire.

FLUOROSE DENTAIRE

La condition pathologique de l'émail qui fut identifiée plus tard comme fluorose dentaire fut remarquée d'abord par Kuhnes en 1888 et par Eager en 1901. Nous devons cependant à Black et McKay les premières études vraiment progressives sur la fluorose. Ces rapports furent publiés en 1916 et étaient basés sur les résultats d'enquêtes menées à Colorado Springs et parmi les tribus indiennes de l'Arizona.

Cette affection limitée surtout aux dents permanentes était plus sérieuse dans certains endroits que dans d'autres. Dans certaines municipalités, toute la population était affectée. Ces dents avaient une apparence "couleur de craie" et, dans certains cas, montraient de petites cavités plus ou moins nombreuses, parfois en chaînons. Une coloration brune qui s'accroissait avec l'âge était bien caractéristique. On croit que cette coloration était causée par des sels de fer retracés dans l'eau et on lui donna le nom de "Colorado Brown Stain".

LA FLUOROSE ET LA CARIE DENTAIRE

Il est reconnu que jamais dans l'histoire de l'hygiène publique, une nouvelle mesure de prévention fut introduite avec autant de preuve de son efficacité et de sa valeur. Jamais les méthodes épidémiologiques furent utilisées d'une façon aussi brillante. Et tout l'honneur doit rejaillir sur la profession dentaire, si enfin le problème de la carie semble être sur le point d'une solution au moins partielle.

McKay avait déjà signifié que l'agent de cet état pathologique était un constituant de l'eau que l'analyse standardisée de l'époque ne parvenait pas à déceler.

En 1916, l'hypocalcification de l'émail qui existait à Colorado Springs attira l'attention de Black, un spécialiste dans l'étude des érosions de l'émail. Après une enquête qu'il conduisit personnellement, il appela lui-même cette condition pathologique "mottled enamel" (émail madré). Trois faits surtout ont prouvé d'une façon bien définie l'hypothèse de l'eau émise par McKay.

A Britton, l'émail madré devint endémique chez les enfants nés subseqüemment au changement de source d'eau potable, en l'occurrence un puits artésien.

Le changement d'approvisionnement d'eau à Oakley produisit les mêmes effets sur les dents des enfants nés après le changement.

A Bauxite, Arkansas, toute la population fut affectée par la fluorose dentaire. Antérieurement à 1928, pour des raisons d'assainissement on avait changé les puits superficiels, dont on se servait, pour des puits artésiens. Après le changement, une fluorose tellement sérieuse se développa qu'on changea une deuxième fois la source d'eau potable pour une nouvelle source.

L'observation très intéressante qui fut faite plusieurs années après ce changement fut que le groupe d'âge le plus jeune de Bauxite, c'est-à-dire celui qui se trouvait le plus éloigné de l'époque où l'approvisionnement d'eau contenait une forte concentration de fluor, avait un taux de carie dentaire plus élevé, malgré le fait qu'il avait été exposé au risque de carie pendant moins longtemps.

C'est précisément l'analyse de l'eau de Bauxite par H. V. Churchill, un chimiste de l'Alcoa, qui révéla l'existence d'un constituant ignoré jusqu'à ce moment; on y trouva en effet une concentration de 14 ppm de fluor, concentration qui était bien caractérisée par la sévérité de la fluorose qui affectait les dents.

Des analyses subséquentes des approvisionnements d'eau dans d'autres localités où le "mottled enamel" existait, ont décelé la présence de fluor dans des proportions variables, et des études plus approfondies établirent définitivement une corrélation entre la concentration de fluor dans l'eau et le degré de sévérité de la fluorose qui affectait les populations concernées. Des études plus élaborées ont démontré que l'immunité contre la carie dentaire était coexistente avec la fluorose, et c'est cette observation de McKay qui attira l'attention du Dr Trendley Dean, qui, en 1938, démontra une variation inverse entre la fluorose dentaire endémique et la carie dentaire. Les études de Britton,

Oakley et Bauxite ont permis de tirer aussi les conclusions suivantes: 1o *que ce n'est que pendant la période de calcification de l'émail que la fluorose dentaire peut être acquise et qu'une fois acquise elle est permanente*; 2o *qu'un individu dont toutes les dents sont déjà calcifiées ne développera pas de fluorose en résidant dans une localité où l'eau contient du fluor, fusse même à une concentration très élevée.*

Un autre indice bien significatif dans les endroits où l'eau était naturellement fluorée, était le pourcentage de la population exempt de carie. A Salida, Colorado, municipalité de quelque 6,000 habitants, où l'eau d'approvisionnement contient naturellement 1.3 ppm de fluor, on a examiné un groupe de 741 enfants dont 414 résidaient en permanence, à cet endroit et 327 avaient acquis une fluorose ailleurs. Les résultats de l'examen de ces deux groupes combinés indiquèrent que 41% *n'avaient jamais souffert de carie.* Au cours de la même enquête, 108 enfants de 12 à 14 ans et de résidence continue présentèrent un taux de carie moyen de 1.19 DMF tandis que 54% *étaient exempts de carie.* Un autre groupe de 97 adolescents âgés de 15 à 17 ans et aussi de résidence continue, avait un taux de carie de 2.0 DMF, avec 40.2% *totalement exempts de carie.*

L'on compara ces chiffres à ceux qui furent relevés à Madison, Wis. où l'eau ne contenait pas de fluor. L'on examina 160 enfants de 12 à 17 ans. Le taux moyen de carie selon l'indice DMF était de 11.16, c'est-à-dire 5½ fois plus élevé qu'à Salida, et tous *étaient affectés d'une façon ou de l'autre.* L'on remarqua de plus que les dents des enfants de Salida avaient un lustre particulier. Cette constatation a aussi été faite par l'auteur lors de l'examen d'un groupe d'enfants de 5 à 8 ans à Newburgh où l'on ajoute le fluorure de sodium à l'eau d'approvisionnement depuis 1945 (1.2 ppm).

D'autres relevés faits par T. Dean au cours de ses recherches indiquent que le taux combiné de la carie dentaire pour 2250 enfants de Galesburg, Colorado Springs, Elmhurst, Maywood, Aurora,

East-Moline et Joliet dont les eaux d'approvisionnement contiennent 1 ppm de fluor à l'état naturel, est de 2.7 par enfant examiné, comparé à 7.7 relevé comme moyenne chez 3150 enfants de Evanston, Middletown, Quincy, Oak Park, Zanesville, Pittsmonth, Waukegan, Elkhart et Michigan City qui n'avaient pas de fluor dans l'eau de consommation.

McKay rapporte d'autres faits non moins concluants concernant le taux de la carie dentaire dans une municipalité où l'eau est naturellement fluorée et en usage depuis 70 ans! Pendant plusieurs années successives, on procéda à l'examen de 511 résidents (résidence continue) dont l'âge moyen était 25 ans. Les résultats indiquent que 36% *étaient en moyenne totalement exempts de carie.* Le taux DMF par individu était 2.6 et la moyenne de dents cariées extraites était moins de .02 *par personne.* On ne releva que 55 surfaces cariées dans les dents antérieures des 511 examinés, et l'on constata que la carie dans les dents affectées par la fluorose était à peu près uniquement *limitée aux points et fissures.* On ne releva en effet aucune carie étendue ou profonde et la carie relevée sur les dents antérieures était négligeable. De plus il fut noté que des immigrants affectés par une fluorose acquise ailleurs offraient à peu près le même degré d'immunité.

Toutes ces recherches laissent entrevoir la possibilité d'un contrôle au moins partiel de la carie dentaire. En effet, il devient évident à la suite de ces recherches que 1o *la fluorose est produite par un élément contenu dans l'eau potable,* et 2o *que le taux de la carie des dents affectées par la fluorose est invariablement très bas.*

Toute cette série d'études établirent aussi le fait que cette immunité aussi bien que la fluorose ne pouvait être acquise qu'à l'époque de la calcification des dents. Ces constatations firent entrevoir la possibilité d'un contrôle partiel de la carie par l'introduction de l'élément fluor dans les eaux d'approvisionnement, à une concentration suffisamment élevée pour favoriser l'immunité et en même

temps suffisamment basse pour ne pas provoquer de fluorose apparente. C'est alors que commencèrent une série d'études, en 1945, qui avaient pour but de vérifier l'hypothèse, études, dont il est fait mention plus loin dans cet article.

METABOLISME DU FLUOR

Nous avons vu que le fluor est assimilé par les os et les dents. Au début, jusqu'à 50% du fluor absorbé peut être assimilé; mais graduellement un niveau s'établit jusqu'au moment où 90% ou plus de la quantité absorbée quotidiennement est éliminée par le rein. Le résidu semble être éliminé par les selles, la transpiration et même par la moiteur cutanée imperceptible. Le danger d'une accumulation toxique de fluor dans les os, surtout en regard des eaux potables, semble invraisemblable par le fait que l'élimination du fluor par l'urine est une fonction tout à fait normale du rein. Des expériences conduites par Smith, Gardner et Hodge démontrent aussi d'une façon concluante qu'une concentration plus élevée de fluor dans l'eau d'approvisionnement ne produit pas une concentration équivalente appréciable dans le sang.

TOXICITE DU FLUOR

La fluorose dentaire est le premier indice et aussi le plus sensible d'une toxicité résultant de l'absorption de fluor. L'expérience toutefois a démontré que l'absorption prolongée d'eau fluorée à une concentration égale ou inférieure à la concentration optima ne produit aucun effet qui puisse être dommageable à la santé. En tenant compte de l'apport quotidien de fluor dans les mets qui constituent notre diète quotidienne, et si l'eau contient approximativement 1 ppm, il y aurait un apport moyen à l'organisme de 1.2 à 1.6 mlg de fluor, en supposant que sous un climat tempéré nous utilisions approximativement 1200 à 1600 CC par jour pour fin de consommation. Les dangers d'une accumulation toxique sont écartés si nous considérons que les premiers symptômes d'empoisonnement se manifestent dans l'absorption d'une dose de 0.25 gm de fluorure de sodium. Dans

0.25 gm de fluorure de sodium, il y a 0.12 gm de fluor; dans une pinte d'eau fluorée à 1 ppm, il y a 1 mlg de fluor! Or pour absorber 0.12 gm de fluor avec une concentration d'eau à 1 ppm, il faudrait qu'un individu boive dans un temps relativement court 120 pintes d'eau, ce qui évidemment est impossible.

Les dangers d'un empoisonnement général de la population ne sont pas plus basés sur des faits possibles, car 0.25 gm de fluorure de sodium dans un verre de huit onces représente une concentration de 1000 ppm de fluorure de sodium ou 400 ppm de fluor. Or, pour obtenir cette concentration, il faudrait ajouter 4 à 5 tonnes de fluorure de sodium par 1,000,000 de gallons d'eau. En établissant, par exemple, le débit moyen d'eau pour Montréal, à 205,000,000 gallons par jour, il est évident que cette hypothèse est inadmissible.

ETUDES PROGRESSIVES

Les études ayant pour but de déterminer en quelque sorte la valeur de la fluoruration furent commencées à Grand Rapids, Michigan, Newburgh, N.Y. et Brantford, Ont. Commencées en 1945, leurs rapports des résultats, émis d'année en année, établissent à date et sans l'ombre d'un doute que nous pouvons nous attendre aux mêmes résultats bien-faisants relevés dans les endroits où l'eau est naturellement fluorée.

Après 5 ans, l'expérience de Grand Rapids démontre une réduction moyenne de la carie dentaire de 49%, pour les dents permanentes d'un groupe dont l'âge varie entre 6 et 16 ans; le groupe d'âges 4 à 8 ans montre une diminution de 35%, en ce qui concerne la carie des dents temporaires.

À Newburgh, après 5 ans, la réduction moyenne de la carie des dents permanentes pour le groupe de 6 à 12 ans est de 40%, et en regard des canines, des lères et 2èmes molaires temporaires, il y a une augmentation de 64% des enfants ne souffrant pas de carie.

À Brantford, après seulement 4½ ans, on constatait une réduction moyenne de 31% de la carie des dents permanentes

pour le groupe d'âges de 6 à 14 ans, avec un changement dans le taux DMF des dents permanentes de 44% en moyenne. Le pourcentage moyen d'enfants âgés de 5 à 16 ans n'ayant pas de carie était en 1945 de 5.2% et en 1950 de 15.6%, soit une augmentation remarquable et bien significative de 300%.

Toutes ces recherches sur la fluorose dentaire et sur la fluoruration semblent indiquer les bienfaits suivants:

- 1o *Il y a six fois plus d'enfants exempts de caries;*
- 2o *On peut s'attendre à une réduction de 60% du taux de la carie dentaire;*
- 3o *La perte de la première molaire serait diminuée dans l'ordre de 75%;*
- 4o *Il y aurait 90% moins de caries sur les incisives supérieures.*

Quoique la corrélation entre la concentration d'ions de fluor dans l'eau et le degré d'immunité contre la carie dentaire soit admise, il reste vrai que son mode d'action ou son mécanisme est encore du domaine de la recherche.

Trois hypothèses son admises. L'une des trois ou l'ensemble des trois peut être possible:

- 1o *Le fluor rendrait la dent plus résistante en rendant l'émail moins sensible au contact des acides buccaux;*
- 2o *Il semblerait que le fluor agit sur les bactéries ou les enzymes qui, croit-on, exercent leur action sur les substances organiques et calcaires de la dent;*
- 3o *Le fluor, par son action sur la flore buccale, réduirait le nombre de bactéries acidogènes qu'on associe habituellement à la carie dentaire.*

Un fait certain, il est prouvé que cette immunité n'est pas passagère, et qu'une fois acquise elle est permanente; ce qui semble bien indiquer une modification dans la structure de l'émail.

L'importance de la fluoruration des eaux d'approvisionnement dans le but de réduire l'incidence de la carie dentaire

est définitivement passée aux Etats-Unis de la théorie à l'application pratique. Le rapport de Stadts, en date du 12 décembre 1951, indiquait qu'il existe dans 37 états différents couvrant une population totale de 4,175,250, 159 municipalités ayant pris l'initiative de fluorurer leurs eaux d'approvisionnement; 136 autres qui avaient approuvé cette mesure prophylactique, tandis que le programme était à l'étude dans 267 autres municipalités; la population totale concernée était de 33,743,894, approximativement trois fois la population du Canada; ceci sans tenir compte qu'une population de 4,000,000 de personnes bénéficiait d'une eau naturellement fluorée à des concentrations variant de 0.9 ppm à 3 ppm ou plus.

Un autre compilation de l'American Dental Association, en date de juillet 1952, donc sept mois plus tard, indique qu'il y a aux Etats-Unis 356 municipalités qui fluorent leur eau d'acqueduc, et 323 qui ont approuvé la mesure et projettent de fluorer sous peu.

La plus récente compilation en date du 6 février 1953 indique que dans 43 états, chez nos voisins, 598 municipalités ont appliqué cette mesure d'hygiène publique. Parmi ces municipalités, pour ne mentionner que quelques unes, il y a San Francisco, Baltimore, Detroit, Cincinnati, Cleveland, Philadelphie, Pittsburgh, Washington, D.C., etc. Ceci est un indice non équivoque de la valeur de cette mesure prophylactique.

La fluoration ne peut être qualifiée d'expérience. C'est une loi immuable de la nature qui a voulu que le fluor soit un constituant naturel de l'eau ainsi qu'un élément nécessaire au métabolisme de l'homme. Les chercheurs ont simplement découvert cette loi et les services d'hygiène publique l'appliquent là où la nature s'est montrée déficiente.

C'est le devoir de chaque médecin et de chaque dentiste d'augmenter leurs connaissances actuelles avec tout ce qui peut être puisé ailleurs pour pouvoir contrebalancer les renseignements faux ou mal intentionnés produits par des gens ignorants et irresponsables. Tous ceux qui ont une affiliation quelconque avec

des groupements dentaires médicaux ou d'ingénieurs hydrauliques devraient pouvoir répondre aux questions suivantes lorsqu'il s'agit de fluoruration :

Est-ce que la fluoruration est dommageable?—Combien cela coûtera-t-il?—Quels résultats pouvons-nous attendre?—Comment la fluoruration est-elle appliquée?

Il faut que tous comprennent bien que c'est surtout la génération qui naît après son application qui bénéficiera le plus de cette mesure. L'effet bienfaisant d'une absorption adéquate de fluor est conféré aux enfants jusqu'à leur douzième année; en d'autres termes, pendant la période de calcification des dents permanentes. Il y a toutefois bien des raisons pour croire que cette protection est permanente jusqu'à un degré appréciable. Il y a une marge bien déterminée entre la quantité de fluor dans l'eau nécessaire pour donner une protection optimale contre la carie dentaire, et la quantité de fluor qui produit la fluorose.

L'installation nécessaire pour fluorer l'eau n'est pas plus compliquée que celle qui sert à la chlorination. Le coût d'opération, moins le coût d'installation, peut varier de .05 à .15 sous par tête de population, selon le débit moyen, la substance employée pour fluorer et la concentration désirée.

CONCLUSIONS

L'effet de la fluoruration sur la dentition des adultes est encore du domaine de la recherche, mais quand il s'agit des enfants, il n'y a aucun doute que l'incidence de la carie dentaire peut être réduite des 2/3 approximativement. Il est bien vrai que des objections sont soulevées de temps à autre en ce qui concerne cette mesure d'hygiène publique. Il y a des gens timides par nature qui sont toujours prêts à voir d'un mauvais œil l'application de toute nouvelle théorie. C'est une réaction tout à fait naturelle chez certains individus toujours craintifs que, si on tente de changer quelque chose dans leur routine habituelle, ils seront victimes d'une calamité.

Nous savons, bien sûr, que le fluor à une certaine concentration peut provoquer

la fluorose; mais nous savons sans aucun doute que plus de 3,000,000 de personnes aux Etats-Unis ont consommé toute leur vie durant de l'eau fluorée à des concentrations très élevées, parfois allant jusqu'à 5.5 ppm (Bauxite, 14 ppm), sans aucun effet dommageable autre qu'une fluorose de l'émail.

Toutefois une des grandes responsabilités de l'officier d'hygiène publique est la prévention de la maladie. C'est lui qui doit juger si les techniques employées sont aptes à donner le rendement désiré et d'une façon aussi effective que possible. Il peut voir en rétrospective et suivre la courbe de certaines maladies contagieuses qui, il y a quelques décades seulement, étaient cause de nombreux décès et qui aujourd'hui sont à peu près disparues: la fièvre typhoïde, la diphtérie, les fièvres scarlatines sont maintenant contrôlées et ne sont plus des problèmes d'hygiène publique.

Ceci est le résultat de nos connaissances qui se sont accrues en ce qui concerne des méthodes de contrôle et d'application des nouvelles techniques.

La carie dentaire toutefois, qui est l'une des maladies chroniques les plus prédominantes, affecte encore pratiquement tous les individus. Jusqu'ici la seule protection que nous pouvions offrir était l'intervention technique du dentiste. L'hygiène dentaire aujourd'hui est reconnue comme une partie importante de tout le programme d'hygiène publique. Pour cette raison il fallait trouver de meilleures méthodes pour son contrôle. Si nous considérons le nombre de dentistes actuellement disponibles, il est évident qu'une fraction seulement de la population pourra être et sera traitée. Par conséquent, il est bien clair et net que l'accroissement annuel des dents cariées non traitées surtout parmi la jeune population ne fera qu'augmenter le nombre de dents actuellement cariées.

A cause d'un budget et d'un personnel limités, l'officier d'hygiène publique doit prendre sur lui de décider quelle partie du programme d'hygiène dentaire devra être considérée, puisqu'il est impossible de rencontrer tous les besoins existants.

Et c'est pour cette raison que nos programmes d'hygiène dentaire publique sont confinés presque exclusivement au traitement des dents des enfants. Il voit avec beaucoup de satisfaction les progrès accomplis au cours de ces dernières années en ce qui concerne la prévention de la carie dentaire. Par conséquent, les résultats démontrés dans les programmes de fluoruration sont de la plus haute importance, et les brillantes études épidémiologiques dans ce champ d'action constituent un avancement notable en hygiène publique.

Encore une fois, l'eau est devenue le véhicule standard dans la prévention de la maladie et nous pouvons maintenant envisager la possibilité que la prochaine génération d'enfants pourra attendre l'âge adulte avec toutes ses dents.

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Sinusite maxillaire chronique latente révélée par une névralgie faciale d'allure essentielle du maxillaire supérieur et du maxillaire inférieur

Femme de 57 ans. Souffre depuis trois ans de douleurs en éclairs très brèves, à répétition, strictement localisées au maxillaire supérieur. Les crises évoluent par séries. Le moindre atouchement de la zone d'excitation provoque une crise. Un stomatologiste consulté enlève toutes les dents. Les douleurs, non seulement persistent, mais gagnent la branche montante du maxillaire inférieur. Un neurologue, devant ce tableau clinique: absence de douleurs provoquées par la pression aux points d'émergence du trijumeau, absence de troubles de la sensibilité, apparition de contractions spasmodiques, caractère des douleurs, pose le diagnostic de névralgie faciale essentielle et propose une neurotomie rétragassérienne. A l'entrée à la clinique de la malade, on pratique un examen rhinoscopique qui est normal. Mais la diaphanoscopie montre un sinus maxillaire droit opaque. Le lavage ramène une grande quantité de pus. Dès la 3^e ponction, les douleurs avaient disparu (J. J. DEBAIN, Presse méd., 31 janv. 1953).



PAGES EDITORIALES

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Hygiène dentaire

Les journaux, les revues, la radio, en un mot tous les médiums de la publicité moderne, multiplient les conseils pour conserver en bon état les dents et les gencives des populations. On met de l'avant les problèmes alimentaires; on parle d'addition de fluor à l'eau des aqueducs pour prévenir en partie la carie dentaire; on mentionne l'emploi de pâtes dentifrices contenant des substances susceptibles de durcir l'émail des dents; on préconise des mesures prénatales pour la mère enceinte en vue d'une dentition parfaite pour son enfant, etc.

On vulgarise les données les plus récentes de la science contemporaine pour que chacun puisse conserver ses dents durant toute sa vie; enfin, on met à la disposition du public des méthodes faciles et commodes pour qu'il soigne l'hygiène de sa bouche. Mais il nous semble que cette campagne patronnée par des associations philanthropiques ou professionnelles abordent la question sous un mauvais angle. Est-on bien certain que les gens désirent conserver leurs dents? L'expérience quotidienne ne montre-t-elle pas qu'un grand nombre de patients, vus dans le cabinet du dentiste, acceptent comme une fatalité implacable la disparition de leurs dents? Ne rencontre-t-on pas souvent des personnes qui croient que la mise en bouche de dentiers complets signifie la fin des ennuis dentaires?

Et combien de fois n'avons-nous pas entendu dire: "Ah! j'aime autant faire extraire toutes mes dents et en finir une fois pour toutes"! Cette habitude de beaucoup de gens, en face de la conservation de leurs dents, contredit le précepte divin qui nous recommande de ne pas mutiler nos corps sans nécessité, mais, au contraire, de les garder dans leur intégrité naturelle.

Il est évident que l'élimination des dents infectées et douloureuses est

souhaitable pour le bien-être de l'organisme; mais ces organes ne deviennent pas nuisibles du jour au lendemain; comme toutes les autres maladies, la carie dentaire débute lentement avec des symptômes et des signes révélateurs; et c'est à ce stage que l'individu se rend coupable de négligence en ne faisant pas traiter ces lésions, pour conserver l'organe malade.

Quand Dieu a créé l'homme, il l'a doté, entre autres choses, d'un appareil digestif qui lui permît d'absorber une nourriture nécessaire à sa "sustention", et les dents sont une partie de ce système digestif.

Je ne crois pas que le Créateur, en faisant les dents permanentes (appellation significative), ait eu l'intention qu'elles ne durent que vingt, trente, ou quarante ans; les dents, selon les plans de la création, doivent servir toute la vie, *à condition* que l'homme en prenne soin!

Ce principe de l'intégrité de l'organisme humain s'applique aux dents comme aux autres parties; on n'a pas le droit de s'enlever la vie, on n'a pas le droit d'annihiler une dent qui pourrait être conservée par des traitements appropriés. Evidemment, la gravité est différente. Les conséquences aussi. Mais le même principe est violé dans les deux cas. Principes mis à part, il y a une foule de raisons physiologiques, esthétiques et pécuniaires qui militent en faveur de la conservation des dents naturelles. Il serait trop long de les aborder ici pour montrer que des prothèses remplacent mal les dents naturelles.

Pour revenir à la propagande d'hygiène dentaire, avant d'indiquer aux populations des méthodes simples et faciles de conserver leurs dents, on devrait d'abord inculquer dans l'esprit des gens des notions utiles sur l'importance qu'il y a à sauvegarder leurs dents. Il ne faut pas mettre la charrue devant les bœufs!

GERARD DE MONTIGNY

XIIIème Congrès Français de Stomatologie

Le XIIIème Congrès Français de Stomatologie se tiendra à Paris du 5 au 10 octobre 1953.

Deux rapports seront présentés:

- le premier traitera des greffes en chirurgie maxille-faciale,
- le second sera consacré à l'étude des ostéo-pathies fibreuses des maxillaires.

Deux questions seront mises en discussion:

- la première sur les implantations dentaires et greffes ou inclusions supports de dents artificielles.
- la seconde sera une étude critique des méthodes récemment utilisées pour la prise des empreintes.

Les Confrères qui désireraient y participer pourront obtenir tous renseignements utiles en s'adressant au Secrétaire Général du Congrès:

Docteur DESCROZAILLES

21, Boulevard Henri IV — PARIS (4ème)

Résultat d'une flânerie dans une épicerie moderne

par PAUL-EMILE POITRAS, D.D.S., Montréal

Pendant les premières années du siècle, la farine blanche, préparée par le cartel des minoteries, n'était pas encore commercialisée au point de la préférer à la farine bis, employée dans la fabrication du pain, et restée en grande demande; les aliments conservés en boîtes étaient rares, c'est pourquoi, une ménagère n'aurait jamais commencé un hiver sans une provision suffisante de légumes, de fruits, de confitures; à agir autrement, elle se serait exposée aux critiques des siens.

A cette époque, les vitamines, ces substances introduites dans l'organisme par les aliments pour en favoriser l'assimilation, étaient inconnues, avec le résultat que les repas consistaient en mets dont la valeur calorique, seule, n'était pas ignorée. Au repas principal, la table ployait sous le poids des victuailles: rotis, ragoûts, pâtés, pommes de terre, gâteaux, tartes, étaient servis mais les fruits brillaient par leur absence; les oranges, importées en petite quantité, étaient distribuées aux enfants comme cadeaux à la Noël! Cependant, personne ne semblait manquer d'acide antiscorbutique. Les biologistes pourraient nous dire d'où venait la source de vitamines C?

Une table bien garnie était le signe d'un bon cuisinier; il importait peu que les viandes fussent mal grillées, les légumes trop cuits, qu'il y eût une grande variété de féculs amylacés; on mangeait beaucoup sans s'occuper du lendemain alors qu'une vie plus active rendait la digestion plus facile. Le véritable sédentaire était rare: les véhicules-moteurs étaient clairsemés, la cité avait une superficie moindre mais la marche était un exercice quotidien.

Nos connaissances des vitamines et des calories ne nous rendent pas plus circonspects que nos prédécesseurs; nous nous gorgeons, à toutes heures du jour, de bonbons, de chocolats, de liqueurs gazeuses, étalés sur des comptoirs, bien

à notre vue, ou bien, moyennant une pièce de monnaie, des boîtes mécaniques nous font la distribution d'une foule de friandises.

De l'avilissement de notre monnaie, tout est augmenté, la viande de bœuf se vend plus d'un dollar la livre; les œufs, le beurre, sont d'un prix prohibitif et nous sommes forcés d'économiser; cependant les légumes, les fruits, moins dispendieux et plus utiles à notre santé, ne sont pas en plus grande demande, durant les mois d'hiver, qu'ils soient cultivés dans les serres ou dans les champs, ils y sont cueillis verts et muris artificiellement. Pour en aider la vente, on y ajoute la marque de commerce "SUNKIST" sans que cette estampille, appliquée sur le zeste d'agrumes, prouve aux consommateurs que ces fruits ont muri aux rayons vivifiants du soleil, qu'ils se sont développés dans une terre riche d'engrais et de minéraux.

Tous les slogans, employés par les compagnies d'alimentation du Canada et des États-Unis, charment notre ouïe et une habile propagande faite de magnifiques étalages, frappe notre vue; nous sommes les victimes de cette publicité à outrance, faite par les meilleurs spécialistes de la réclame, au bénéfice des monopoles des vivres.

Les femmes s'occupent ordinairement d'approvisionner la famille de denrées, elles poussent un chariot à travers les allées d'une épicerie; il faut les voir accumuler sans discernement la marchandise exposée sur les tablettes.

Je me suis arrêté au comptoir d'une caisse enregistreuse afin de surveiller le contenu des paniers. Je fus étonné de voir combien il y avait d'articles amylacés, sucrés: macaroni, spaghetti, pain blanc, gâteaux, céréales, confitures, gelées, marmelades, biscuits, pâtisseries, pommes de terre, etc.; le manque de légumes et de fruits m'a attristé. Parmi la population de Montréal d'au delà d'un million, con-

naissiez-vous plusieurs citoyens ayant un jardin où les légumes et les fruites y sont cultivés? Les règlements défendent d'y élever des poules, la crème n'y est plus baretée pour faire le beurre; aussi le temps est déjà loin où les familles se glorifiaient de subvenir par le travail à leurs besoins; de nos jours, la ménagère, habituée aux commodités de la vie, trouve ses provisions, avec le prix, tout pesées dans des sacs, des cartons, des boîtes métalliques. Pourquoi hésiterait-elle à en tirer profit?

L'honorable Paul Martin, ministre du Bien-Etre et de la Santé, à Ottawa, donne son concours aux diététiciens pour permettre à ceux-ci d'instruire les Canadiens des qualités de la nourriture qu'ils mangent. Un changement de mentalité s'opérera dans l'avenir et les épiciers, soucieux de leur réputation, seront forcés de vendre de meilleurs produits.

Des tableaux, rédigés simplement, pourront être affichés pour aider les femmes à s'approvisionner de protéines, de gras, de minéraux, utiles à une bonne santé.

La radio, la télévision, les journaux nous forcent, pour ainsi dire, à nous procurer des denrées, qui, malgré notre volonté de rester indifférents, n'ont pas toujours la valeur prônée par la réclame. Notre éducation est faussée par l'énoncé de faits sans garantie de vérité.

Ces tableaux, exposés sur un pan du magasin, bien à la vue, mentionneraient, comme je l'ai déjà dit, le nombre de vitamines, de calories, de qualités nutritives des aliments; ils présenteraient une juste signification dans les termes, ne seraient pas commercialisés. Autrement, ils entraîneraient des échecs en éveillant chez les lecteurs de la défiance. Les panneaux, selon la localité, seraient présentés de façon à continuer l'instruction des chalands des grandes épiceries, dont les directeurs, avides de profits, vendraient des denrées qui ne seraient pas à l'encontre des lois du pays et seraient acceptées par les diététiciens.

Qui sait? Ce rêve deviendra peut-être une réalité, un jour.

2043 rue St-Denis.

Congrès de L'ASSOCIATION DENTAIRE CANADIENNE A MONTREAL

les 18, 19, 20 21 octobre 1953

organisé sous les auspices du

**Collège des Chirugiens-Dentistes de la Province de Québec
par le Montreal Dental Club**

Pour faciliter la tâche du Comité d'organisation et pour éviter la cohue des derniers jours, on est prié de s'inscrire à l'avance et de réserver ses chambres d'hôtel en s'adressant au docteur D. B. Ward, 1414 rue Drummond, Montréal.

Prix de l'inscription: \$15.00

**Congrès de l'Association Dentaire Canadienne, organisé par le
Montreal Dental Club, à Montréal, le 18, 19, 20, 21 octobre**



Place Royale

L'endroit où commença à bouger tout un continent! Ici, en 1642, fut fondée Ville-Marie, qui devait devenir, plus tard, Montréal. A l'arrière-plan, on aperçoit les tours jumelles de Notre-Dame et l'édifice Aldred.

Exposition artistique

Comme par les années passées, il y aura, durant le Congrès, une exposition de travaux d'art exécutés par les dentistes ou les membres de leur famille.

Ces oeuvres d'art peuvent comprendre des peintures, des dessins, des aquarelles, des sculptures, du fer forgé, du cuir repoussé, des reliures, des photographies, etc.

Tous les dentistes du Canada sont invités à prendre part à cette exposition, qui sera étalée dans la galerie d'entresol de l'Hôtel Mont-Royal.

Les envois devraient être expédiés une semaine avant l'ouverture du Congrès, à l'adresse suivante:

L'Association Dentaire Canadienne
a/s M. Mitchell,
Antoine's Art Gallery,
939 Carré Victoria,
Montréal.

Cette maison, qui a l'expérience de ce genre d'exposition et de la manipulation des travaux artistiques, recommande aux expéditeurs les précautions suivantes:

(1) Bien adresser l'envoi et coller au verso de la peinture le nom et l'adresse du propriétaire; joindre, en plus, une carte portant le nom de l'auteur et le titre de l'oeuvre pour l'exposition.

(2) les peintures devraient être encadrées, les oeillettes enlevés, bien emballées (cadre

en bois, si nécessaire) les peintures et les autres objets volumineux expédiés par train.

(3) On acceptera les photographies dont les dimensions ne sont pas moindres que 8" x 10"; elles devront être accolées à des cartons de 16" x 20" ou encadrées d'un passe-partout. »

Le nom et le titre devront apparaître sur l'encadrement.

Ces photographies peuvent s'expédier par la poste.

On prendra toutes les précautions possibles pour protéger les travaux, mais le Comité ne peut se rendre responsable des dommages ou de la perte.

Le Comité se réserve le droit de se servir de ces oeuvres d'art pour des fins publicitaires, à moins que les auteurs signifient expressément leur refus par lettre.

Dès après le Congrès, les travaux seront retournés à leurs propriétaires.

Les organisateurs de cette exposition, qui prend de plus en plus d'envergure chaque année, espèrent que les dentistes, les membres de leur famille ou leurs employés profiteront de cette occasion pour exhiber le talent indéniable des membres de la profession dentaire.

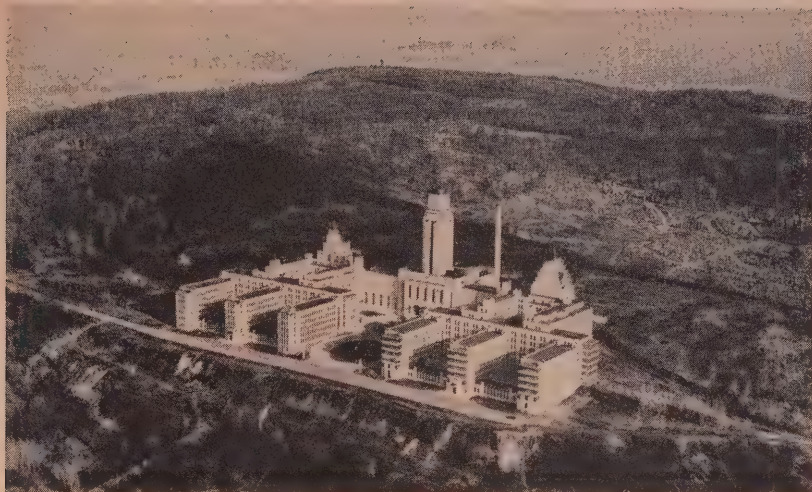
Pour tout renseignement, on s'adresse aux docteurs A. R. Winn ou Louis Lépine, Edifice Medical Arts, Montréal.



Fête en l'honneur du docteur J. Arthur Renaud, professeur "émérite" à la Faculté de chirurgie dentaire de l'U. de M.

Photo prise à l'occasion de la présentation d'un cadeau-souvenir au docteur J. Arthur Renaud, professeur titulaire de préclinique, qui prend sa retraite après vingt-huit années d'enseignement à la Faculté.

De g. à d.: les docteurs Gustave Gauthier, secrétaire du Conseil; J. Arthur Renaud; Ernest Charron, doyen de la Faculté; Paul Geoffrion, vice-doyen de la Faculté; Gérard de Montigny, chef du service de chirurgie.



UNIVERSITY OF MONTREAL

*Host for a portion of the National Convention programme as part of the
University's Fiftieth Anniversary celebration.*



JOINT MEETING

THE CANADIAN DENTAL ASSOCIATION THE ANNUAL MONTREAL FALL CLINIC

Under the Auspices of

THE COLLEGE OF DENTAL SURGEONS, P.Q.

OCTOBER 18, 19, 20, 21, 1953

PLAN NOW TO ATTEND

Cheques or money order for registration fee of \$15.00 should be made payable to The Montreal Dental Club and mailed to Dr. D. B. Ward, Joint Convention Committee Secretary, Suite 309, 1414 Drummond Street, Montreal, Que.



To
Matthew Henry Garvin,
D.D.S., F.I.C.D.

and

Thomas Robert Marshall,
D.D.S., F.I.C.D.

men of high ideals, lofty purposes and
sound principles, who, for so many years,
guided the destinies of the Journal of the
Canadian Dental Association, this issue
is gratefully dedicated.

The Journal

OF THE CANADIAN DENTAL ASSOCIATION

VOL. 19

TORONTO, SEPTEMBER, 1953

No. 9

77 Practical Surgical Observations*

by GEORGE A. MORGAN, D.D.S., Toronto, Ontario

PART ONE

Pre-Operative Observations — Pre-Operative Precautions

OBERVE your patient's general condition.

1. Skin colour—pale faces are generally suggestive of anaemias; flushed or red faces suggestive of hypertension.

2. Shape of face—square faces have end to end bites, shorter, heavier root structure, heavier, denser bone. Elongated faces have longer, more fragile root formation, less dense overlying bone. Round faces are considered normals.

3. Temperament—does the patient walk in or crawl in? Is the patient nervous, irritated or lethargic?

4. Age of Patient—bone structure in children and young adults is more pliable than that of middle or older aged patients.

5. A thermometer is an essential part of any diagnostic procedure. Operative precaution should be used in patients who show an elevation in temperature.

Take Adequate X-rays

Sufficient x-rays should be taken to cover the operative field. They should be viewed under magnification. They should be taken at proper angulation

well processed, and suitably mounted, not examined singly. .

In examining x-rays, a basic knowledge of dental anatomy, histology and pathology is essential.

When the operative problem concerns one of anatomical structure, an x-ray of the opposite side should be taken to determine the deviation from normal.

It should be remembered that 5% of the maxillary antrums extend as far forward as the laterals. While it would appear that the root structure of many posterior, maxillary teeth penetrate the maxillary sinus, this is rarely the case, the maxillary antrum dipping down in between the buccal and lingual roots.

Retained roots, that in the x-ray are clearly visualized, lie close to the film, are on the lingual or palatal aspect and therefore look easy but are difficult to remove. Retained roots that are not clearly visualized in the x-ray, lie farther away from the film, are generally on the buccal aspect, look difficult but are easy to remove via the buccal approach.

It is important to note in the x-ray, the overlying thickness of ridge or maxillary, heel tissue.

*Paper read at Sudbury Dental Meeting—April 1, 1953.

Observe Your Surgical Field Clinically

This includes the palpation of bone overlying the tooth or teeth to be extracted, colour of surrounding mucous membrane and the rotation and position of teeth in the arch, in relation to normal. Heavier bone can be expected to be found overlying the root in the same direction as the rotation. For example, a mesially rotated, maxillary, right first molar will have increased bone structure over the mesially rotated root.



FIG. 1. *Smooth surfaced non-malignant, cystic fibroma.*



FIG. 2. *Smooth surfaced non-malignant, giant-celled tumor.*

Oral lesions that are smoothed surfaced are likely not malignant. Lesions that are rough, pebbly or ulcerated in appearance are likely malignant. Bone growths or proliferations are generally negative. Bone destructions may be malignant. Unusual appearing pathological lesions should be biopsied.

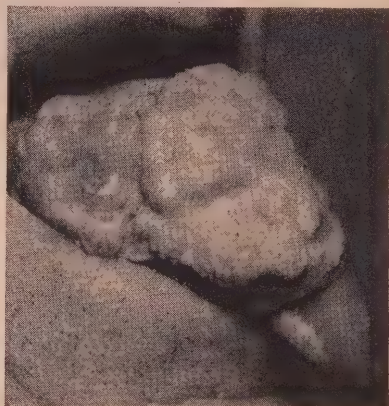


FIG. 3. *Rough, pebbly surfaced malignant epithelioma.*

Enquiry re Previous Surgery

Ask patient about previous difficulties, haemorrhage, post-operative complications, for if previous dental surgery resulted in post-operative trouble, you will likely have trouble too.

In dealing with impacted, third molars, it is important to remember that they constitute a difficult problem if the root structure is not fully formed as in the case of teen-aged children.

It should also be remembered that impacted teeth in adults who are past middle age, constitute a difficult problem in most cases due to the pressure atrophy of the periodontal membrane and the sack surrounding the crown of the tooth.

In cases of hypertension and coronary complications, it is well to remember that the adrenalin put out by the patient, in anxiety, fear and pain, is more important than the adrenalin injected by the dentist.

The evaluation of the surgical risk in patients with diabetes or any one of the various blood dyscrasias should be in co-operation with the patient's physician.

Determine from parents of child patients, general health conditions.

Pre-Medications

It is wise to pre-medicate in all difficult cases and in all multiple extractions. Some form of barbiturate—nembutal, seconal, pentanec. For relief of immediate post-operative pain—veganin, atidol, demerol. Dosage to

conform with the problem and age of patient.

Evaluation of Foci

A careful evaluation of the risk involved in the removal of foci is necessary. Certainly one does not seem warranted in removing foci merely suspected to being the seat of infection. It is much easier and safer to arrive at a decision to remove teeth hopelessly involved than it is to decide to sacrifice non-vital teeth that are useful teeth and are found to be normal on Roentgenological examination.

PART TWO

Operative Procedures

SUCCESSFUL operative procedures are primarily based on thorough technique of sterilization of dental instruments, sponges and all other operative equipment. Many methods of sterilization are available including cold sterilizing solutions, ultra-violet ray, water and the use of the autoclave. Of all of these methods, the autoclave sterilization is the most positive and due to recent improvements in technique, it is now the safest and the fastest.

It is suggested that separate needles should be used for each injection, and different knives and chisels for each infected area. This rule may at first appear to be one of over-caution, but common sense analysis and the decrease in post-operative tissue reaction, will more than justify it.

Razor sharp instruments and clean cut incisions make for rapid healing post-operative wounds.

Initial dental surgery should be confined to half of either the maxilla or the mandible. If this procedure is adhered to, surgical tolerance of the patient can be determined.

It is well to remember, that in general, single rooted teeth, except the laterals, are rotated, multi-rooted teeth are luxated. Cuspid should be

rotated mesially, towards the mid-line. This rotation brings the distal curvature of the cuspid root towards the thin, buccal layer of bone and many cuspid root-tip fractures are avoided. If the six anteriors are to be removed at one sitting, it is advisable to remove the cuspid first. This procedure will give you some bone support from the lateral and fracture of buccal bone overlying the cuspid will frequently be avoided.

Conditions which involve bone pathology, impacted teeth, mal-formed, retained or hyper-cementosed roots, require surgical flaps. Surgical flaps when made, should be generous in size, to give good blood supply, provide adequate vision of the surgical field and be replaced on a good sized bone shoulder. Surgical flaps should not be made over the cuspid region, since the tissue in the area is thin. For example, if a first bicuspid root is to be removed, a flap should be made distally over the second bicuspid.

Impactions

Impactions in persons past forty, are frequently difficult and fraught with the possibility of jaw fracture due to the erosion of the periodontal membrane and the fusion of the impacted

tooth with surrounding, brittle, dense bone.

Generally the maxillary, third molar is easier to remove than the mandibular, third molar. Removal of the second molar in teen-age children, will allow the adjacent third molar to erupt normally in the maxilla but this is not true of the mandibular, second molar. The mandibular, impacted third molar in children, fourteen to seventeen years of age, is most difficult of removal due to the absence of the calcified root structure stabilizing the crown.

The vertically impacted, mandibular, third molar is much more difficult to remove than the angular impaction.

Dry Sockets

Many dry sockets can be spotted from pre-operative x-rays. They occur most frequently around devitalized teeth of long standing, and are more common in the posterior part of the

mandible. Many dry sockets may be aborted by removing the hard, boney, inter-proximal septum. This leaves only one blood clot to organize in the socket. If a dry-socket does develop, there is only one, easy of access socket to dress.

Cysts

Cysts of the mandible, while they appear large, are not as a rule comparable to a similar appearing size cyst in the maxilla. This is due to the comparatively thin buccal-labial, lingual width of the mandible.

If the cyst is removed first and the teeth involved in the cyst second, many functionally useful teeth will be preserved. Fig. 1.

The complete enucleation of the cystic wall and its contents allowing the bone cavity to fill in with a normal blood clot, seems to be the best method of treatment.

In large cysts a packing of Gel-foam

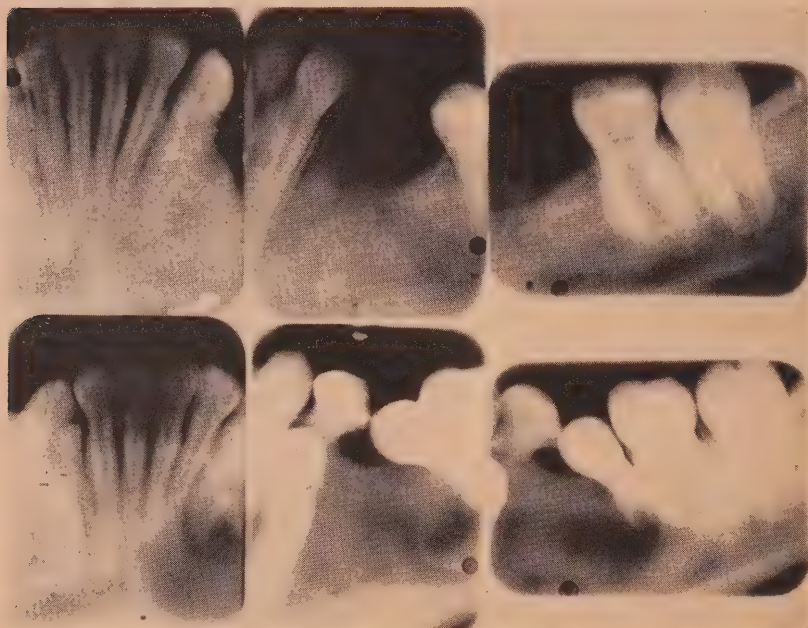


FIG. 1. Pre- and post-operative X-rays. Large mandibular, radicular cyst, illustrating the saving of teeth by first removing the cyst and the teeth involved secondly!

dipped in a penicillin solution, serves to control haemorrhage and helps fill up the bone cavity without a noticeable delay in filling in of normal bone. Fig. 2.

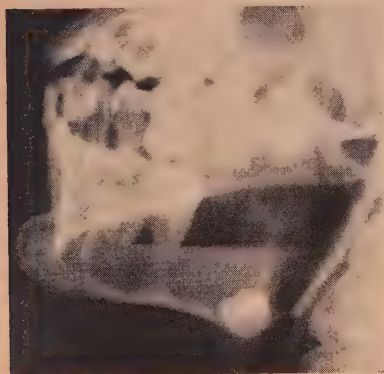


FIG. 2. Large mandibular, dentigerous cyst.

In the anterior maxilla, differential diagnosis between a maxillary, median-line cyst and one of tooth origin, is necessary. Probably the best aid in



FIG. 3. Occlusal radiogram illustrating large median line cyst associated with three devitalized, anterior teeth. Note that median line suture divides the cyst into two equal parts.

roentgenological differential diagnosis is to observe the condition in an occlusal ray, not depending entirely on the customary intra-oral dental ray of the maxillary, central incisors. Median-line cysts will generally be observed to be spherical and divided by the median line suture as illustrated in Fig. 3. This will be found to be in strict contrast to cysts or infected areas about centrals or laterals which have a tendency to be observed on either one side or the other of the nasal spine. This is illustrated in Fig. 4. In many instances, two separate



FIG. 4. Occlusal radiogram illustrating large radicular cyst which has invaded the palate. Note cyst is to one side of median line suture.

cysts are found, one on each side of the mid-line. Frequently one is able to trace in the dental rays of the anterior region, the intact periodontal membrane around the anterior teeth, thus eliminating the suspected teeth as the aetiological factor in the median line cyst. Cysts are more easily recognized in the edentulous jaw and may present a protuberance on the alveolar ridge and cause localized or referred pain in the anterior region of the maxilla due to nerve pressure internally

from the cyst and externally from the denture.

Occasionally cysts of traumatic and indeterminate origin may be seen, which seem to develop independently of the dental system. Since these cysts generally exert no pain symptoms and do not seem to enlarge, operative procedures are generally unnecessary. Those observed most frequently are located at the angle of the ramus and are thought to originate from remnants of Mechel's cartilage. Illustrated in Fig. 5.

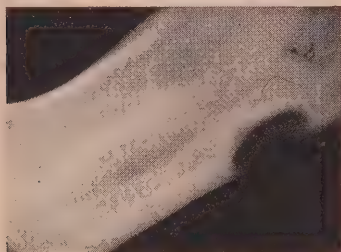


FIG. 5. Cyst at angle of mandible of indeterminate origin.

PART THREE

Post-Operative Care

Routine Treatment

IT is suggested that following dental surgery, a gauze pack should be placed over the operative wound and left in place until the patient arrives home. This procedure avoids irritation of the area and allows sufficient time for organization of the blood clot.

Where surgery has been difficult or extensive, cold applications should be applied externally to the operative area for a period of one to three hours immediately after operation.

Sufficient post-operative medication should be given to control pain and assure adequate rest.

The patient should be advised not to rinse the mouth until the following morning since rinsing may dislodge the blood clot and interrupt the normal process of healing.

The patient should be advised that some oozing of the operative wound is to be expected. If there is active

bleeding, a clean pad of gauze may be placed over the wound and close the mouth to cause pressure.

Some degree of swelling can be expected the second day after extraction. Warm external applications will do much to reduce the swelling.

Post-Operative Pain

In the control of second and third day post-operative pain, it is essential to determine the cause of the disturbance. It may be due to the presence of spicules with or without hypertrophied tissue; it may be the result of trauma; it may be pain in a normal wound, or in the so-called dry-socket in which the normal blood clot has been disturbed.

Patients should be seen on the third post-operative day. If a dry socket is going to develop, the blood clot will be a dark liver colour with a characteristic odour. Remnants of the unorganized blood clot should be removed and a course of treatment started immediately. The principle of dry socket treatment is to protect the nerve endings at the bottom of the socket by some means of packing thus keeping the patient free from pain.

Haemorrhage

Extensive post-operative haemorrhage is controlled by re-injecting the operative area, removing the remnants of the old blood clot and packing the socket with some form of dissolvable packing — gel-foam, hemo-pac or oxycel, and suturing the operative wound and the use of pressure. Home treatment should include rest with the head in an elevated position, cold external applications and a course of vitamin "K" tablets, (Kavitan 5mgms), plus ascorbic acid tablets, (250 mgms).

Post-Operative Swelling

The persistent swelling following extraction that becomes hard and extends below the border of the jaw is spoken of as cellulitis. There is usually elevation of temperature and the patient is more or less toxic due to lack of drainage. Treatment in these

cases, consists of roentgen rays of the area, to determine if there is any destruction of bone. Special attention should be given to elimination and the forcing of fluids. Constant hot compresses and mouth washes are important to speed up localization. Once the condition is localized, good drainage should be established. Occasionally, it is possible to obtain drainage through the operative wound, but ordinarily that drainage is not sufficient.

The intelligent use of the thermometer and observation of the patient's general toxic condition, will do much to determine the course of post-operative treatment.

In the last few years in a number of cases, actinomycosis, commonly called lumpy jaw, has been diagnosed following the extraction of teeth. Persistent swelling accompanied by copious drainage of pus should cause one to suspect this condition. It can readily be recognized by the heavy yeast bodies in the discharging pus. The condition seems to be more common in the rural communities.

The maxillary sinus is very closely

related to the upper bicuspid and molar teeth. Occasionally the sinus is perforated following the extraction of these teeth. It will be remembered that the sinus does not tolerate water well. It is lined with a ciliate columnar epithelium which changes to a squamous type when washed too often with water. Many sinuses are perforated during extraction and the condition is often unrecognized. Almost all patients with chronic fistula of the maxillary sinus communicating with the mouth give a history of the sinus having been washed out and the opening packed with gauze; infection is sure to result. When such a perforation does occur, it is best to allow the socket to fill with a normal clot and, in trouble following, refer the patient to an otolaryngologist to see that the physiologic opening into the nose is sufficient to take care of the drainage.

Post-Operative Gagging

Post-operative gagging can generally be controlled by the administration of 50 to 100 mgms. of Benadryl. This may be especially helpful in immediate denture insertion.

The Epidemiology of Dental Caries*

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THE simple process of theorizing and then testing the theory against observable facts has resulted in fabulous successes in physics, mathematics, and biology. This procedure is the essence of the scientific method. It allows all the imaginative and inventive skill of a research worker to be used in working out a tentative solution to a problem but rejects this solution if its implications are not in keeping with known truths.

Syllogistic reasoning, the tool of the

ancient philosophers, became so degraded in the middle ages that such questions as, "the number of angels who could sit on the head of a pin" caused heated debate among so-called educated people. All manner of weird conclusions were drawn by logical reasoning based upon false premises. With the coming of the Renaissance men were made free to challenge concepts which had been born of authority and fostered by custom. Mere superstitions and empirical truths began to be cast aside upon exposure to facts.

In the early days epidemiology was

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literally the study of epidemics but it has come to mean the application of the scientific method to the study of disease. Stallybrass¹ has described the steps formally in this order: observe, tabulate, array, analyze, construct hypothesis, test hypothesis. In practice these steps may be carried out rapidly and without recognition in the mind or they may involve detailed tabulations and complicated statistical analysis.

Epidemiological hypotheses are constructed by fitting together all the similarities and contrasts, observed among the people involved in an epidemic, in an attempt to reconstruct the truth. To be acceptable the working of the hypothesis should be demonstrated experimentally or substantiated in terms of new information. A simple illustration may be found in a fictional food poisoning outbreak where all those who ate some particular food became ill and all those who did not eat the suspected food remained quite well. The obvious hypothesis would be that the food made the people who ate it ill. This could be substantiated rather drastically by having some of the suspected food served to another group of people to see if they too became ill. In applying the process to the study of dental caries, we find that it is workable, but it is complicated by hazy diagnosis, and contrasts or similarities, which are often not precise or definite.

Dental caries may be thought of as an epidemic which began thousands of years ago and has continued throughout the ages up to and including our own time. In the past, some epidemics of more lethal character have burnt themselves out after destroying the susceptible individuals. Others have inflicted such misery on the human race that their control has been worked out as a necessity for survival. Dental caries rarely endangers life and although the pain resulting from neglect is severe for a matter of days, it generally subsides to a tolerable level even without treatment.

The medical complications of dental caries have been thought to be confined to mild fevers, local abscesses, and indigestion, with sometimes a rare fatality due to sub-acute bacterial endocarditis. The possible effects of chronic abscesses on the general metabolism or the longevity of the individual are a matter for speculation at present. Thus prevention has been neglected and dental caries remains rampant affecting close to one hundred per cent of the people in civilized nations today.

So little is known of the physiological conditions associated with dental caries that we are forced to assess the intensity of the condition within groups of individuals according to the proportion of individuals free of decay, or by the average number of cavities per individual. The difficulties and limitations of this process are analogous to, and about as complicated as a study of chicken pox based on the number of pox per child. Those who have some knowledge of elementary statistics will understand the wide chance variation possible between the caries scores of individual children even though their susceptibility to tooth decay may differ very little. When one child has two cavities and another has five or six cavities, it is a risky procedure to attribute the difference to some particular agent or course of events. Such inferences can only be drawn from group comparisons.

The gathering of dental caries data is particularly vulnerable to conscious and unconscious bias because caries lesions start as microscopic defects in the enamel which gradually become larger with time. It is difficult, if not impossible, for different examiners to agree on the size a lesion must reach before being recorded. This difference in judgment seems to be fairly characteristic of each examining dentist. If the same dentist is used throughout a study, his bias does not matter for the purpose of comparisons. When more than one dentist is used, it is possible to grade or standardize

their observations by having them perform duplicate examinations on the same group of children. Such standardization is, of course, less practical when the examiners are separated by great distances or when the observations are performed over a period of years.

The use of X-ray by dentists can bias the dental caries rates obtained in field surveys. Cavities occurring between the teeth are not observable clinically until they are many times the size of cavities observable on tooth surfaces open to direct vision. X-ray examination will reveal these hidden cavities and the resultant caries scores will be higher than those based on visual technique. At first glance, it would seem that these higher scores which are made possible by X-ray examination would not influence a clinical study provided the radiograms were either used for all the examinations or not used for any of the examinations. However, if the amount or quality of dental care differs between the groups of children being examined, bias is introduced. To illustrate the point a child may show no cavities clinically; but radiograms taken by the dentist may reveal several incipient cavities between the posterior teeth. If the dentist fills these cavities, they then will be observable clinically and the child's score will be biased upward. This bias is not just confined to the interproximal surfaces because it is necessary for the dentist to cut away part of the occlusal surface of the tooth to gain access to the hidden cavity. One thing may be said concerning this type of bias. Most dental programs result in an increase in dental care. The effect of an increase in dental treatment is to bias the dental caries scores upward and this is less dangerous than the production of false downward trends.

If an ideal and fool-proof index were to be developed for appraising the dental caries attack rate in terms of the cavities themselves, it would probably have to be based on a combination

of clinical and X-ray examinations. For this purpose the examiners would be standardized, the X-ray films would be interpreted by two or more clinicians and the group identity of the children undisclosed to the examining dentists. Very often such a procedure would involve unwarranted time and expense. For practical experimental situations some compromise can generally be devised to simplify the procedure and still produce comparisons which are valid to test a well-defined hypothesis.

The occurrence of diseases has been said to be determined by the interplay of three classic variables: exposure to the essential germ or circumstance, the virulence of the infecting agent or the intensity of the untoward condition, and the resistance of the individual. Their application to the study of dental caries will be discussed in the order named.

The most obvious approach to the study of a disease is to see how the sick persons differ from those who are not sick. Dental caries is so widespread that a "well" individual is rarely seen. Most studies have been conducted among individuals who are all affected by dental caries and who differ only in the number of observable cavities. It is not impossible that the essential something which permits teeth to decay has been missed. The importance of this neglected study has been recognized by the Epidemiological Section of the Faculty of Dentistry's Research Division whose members are undertaking to collect data on the apparently caries immune children whom they observe in their work as Dental Health Officers.

Klein² has shown that siblings of apparently immune children tend to have less decay than do the brothers and sisters of children who have dental cavities. The dramatic and distracting thing is that children can be born of the same parents, live under the same roof, apparently eat the same food, and still differ markedly in their number of dental cavities. The number of

dental cavities is no doubt predisposed to a considerable extent by genetic or developmental factors and is also remarkably sensitive to slight differences in the individual's living habits. The pursuit of these factors which merely influence the number of cavities to occur has absorbed most of our attention and may have kept us from finding the less obvious but essential condition which permits living teeth to decay at all.

Next let us examine some of these factors which influence the number of cavities produced in the teeth of a susceptible individual. Without knowing what makes an individual susceptible, it is difficult to absolutely define which factors modify the intensity of the caries attack and which have to do only with environmental factors associated with the habits, or place of living, whereas the latter characterize the physical makeup of the individual.

There is evidence suggesting that the number of dental cavities will be greater: when the fermentable carbohydrate intake is high⁸, when the lacto-bacillus count is high⁴, when tooth colour is grayish white instead of having a yellow cast⁵; when oral hygiene is unsystematic⁹, when the fissures on the surface of the teeth are deep⁷, when the tartar deposits are scanty or absent⁶, when the mineral content of the local drinking water is low^{9,10}, when the place of residence is far from the equator¹¹, and etc. The interplay of this multiplicity of factors, cancelling or augmenting each other according to the chance importance of each factor in the life of an individual, probably determines the number of cavities to be found in the mouth of that individual.

Reid and Grainger¹² at the University of Toronto have shown that the distribution of the counts of carious smooth tooth surfaces per child can be described by the negative binomial probability distribution. The fit of this probability distribution to the dental

caries data clearly establishes that the number of tooth surfaces to be affected is determined by chance and that the probability of decay occurring differs with each individual.

The hypothesis follows easily that if people were informed which environmental conditions or habits tended to promote caries and which tended to protect against caries, they might voluntarily decrease their own susceptibility to decay. This has been demonstrated among individual patients who have been enthusiastic enough to follow the rather spartan regime laid down by their private dentists¹³. The practicability of this as a preventive measure is being tested in various dental health programs in this Province. Recent evidence from the Welland County Health Unit¹⁴ suggests that the dental caries attack rate may be influenced in mass by an educational program. If the necessary voluntary co-operation is to be increased and retained, the control measures being advocated must be carefully studied and if possible improved.

Aside from finding the specific physiological or circumstantial condition which permits teeth to decay, the greatest hope of preventing dental caries probably lies in the development of those agents or techniques which can be employed in mass without the conscious daily co-operation of the patient. The possibility of producing more resistant teeth through better nutrition at the time of tooth development has been advanced by Sognnaes¹⁵. Various reagents such as fluoride compounds¹⁶ have been applied to the teeth as a means of improving their surface resistance after eruption. Special dentifrices^{17,18} and mouth washes containing enzyme inhibitors to prevent the breakdown of fermentable carbohydrates in the mouth have been used with some success. And last but not the least, the protection of teeth by adjusting the amount of fluorides in municipal water supplies promises great relief.

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Public Relations—"Good Performance, Publicly Appreciated"*

by HERBERT B. BAIN,

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CANADA and the United States have long demonstrated a type of good international public relations which, it seems to me, could well serve as a world-wide pattern in these unsettled and troublesome times. In virtually all fields the citizens of Canada and the United States have worked closely together sharing knowledge and building toward democratic solutions of our common problems. This is particularly true in the profession of dentistry. The development and progress of the dental profession of Canada and the United States have been strikingly similar. It must be recognized that much more remains to be done in strengthening the professional bonds linking dentistry in our neighboring nations. The pattern of cooperation has been clearly demonstrated. I am certain that we shall continue to move through the years to a greater degree of professional solidarity.

One field in which I believe we have made striking progress is that of dental education. Today nearly one-third of the states of the United States accept without limitation the graduates of the

accredited schools of Canada. There has been free exchange of information between the Councils on Dental Education of our two nations. I am certain that we soon shall see the day when there will be a full, unrestricted program of mutual recognition of all accredited dental schools in the United States and Canada.

The free exchange of information regarding dental research, dental economics and trends in dental practice also typifies the cooperative spirit existing between the American Dental Association and the Canadian Dental Association.

There is a comparatively new field of formalized activity known as public relations which has been receiving considerable attention from all organized groups in recent years. As you know, the American Dental Association has maintained an active public relations department for many years. Dr. R. R. McIntyre, of your society, has just described in considerable detail the growing interest of members of the Canadian Dental Association in this subject. I believe there is the

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same need for the exchange of information regarding public relations programs of our two societies as there is in other fields of professional activity.

Most people agree that public relations is of great importance in the complex society of modern civilization. The very existence of modern civilization is predicated upon the requirement that men must work together, that they have various relations with one another. Since the very first civilization men have been concerned with their public relations, although it has not been too long since this activity has been known by its present, all-inclusive name.

There are many definitions of public relations. There are so many, in fact, that the trouble with the term is not that it has no meaning but that it means too many things. Of the many definitions the one that I like best is simply: good performance publicly appreciated. That is, an individual or a group will have good public relations when the majority of the public concerned is convinced that his activity or product is good or satisfactory.

A similar definition of public relations was presented recently by the public relations director of one of the largest oil companies in the United States. He reduced the definition to a formula in which he said "X" plus "Y" equals public relations. In this the "X" is the product, the service or the performance. The "Y" is the interpretation or the publicity. Together the "X" and the "Y" determine the public relations.

It is obvious in this that if the "X," that is the performance or the service, is faulty or inferior, no amount of "Y," the publicity or interpretation, is going to result in good public relations.

The "X" part of our formula, the performance, the service or the product, is by far the more important part of public relations activities. Today we find that many industrial firms which are spending large sums of money on

so-called public relations programs do not have good public relations.

The answer lies in the fact that these firms are viewing public relations as press agency or publicity. They aren't functioning within the full meaning of the term "public relations." The end results of press agency are temporal. They are quickly forgotten. New stunts have to be devised time after time. And often, these stunts merely tend to aggravate the situations they were intended to cover up. The average individual usually won't buy a pig in a poke, at least not the second time, without beginning to question the motives of the man who sold it. It's very much like the travelling medicine man of a generation ago. There was a very good reason he kept travelling.

It is surprising that there are still so many who believe that publicity or press agency can gloss over or cover up adverse situations. Good public relations cannot be achieved overnight. Good public relations is built up slowly. Usually, it does not lend itself to a blitz operation. Today, too many public relations campaigns are in reality defensive operations. A defensive operation is not enough. Of course, the erroneous propaganda of the opposition must be countered and repulsed. But it simply is not enough to be on the defensive alone. A positive program, an aggressive program must be advanced so that the public does understand where its own best interests lie.

The development of a positive program, an aggressive campaign, brings us right back to the "X" in our formula. I think it is obvious that if present policies are leading to a multiplication of bad public relations, something ought to be done about those policies. Thus, we find that public relations, in actuality, is a function of management. It follows logically that if public relations stems from policy or performance, then public relations should be considered when that policy

is decided. Not afterwards when it is too late.

The basic decision, the actual determination of policy is not the job of the public relations counselor. Dentistry affords us a good example of this. Those in the profession who have devoted their lives to the study and practice of the art and science of dentistry must assume the responsibility for basic policy. It cannot and should not be turned over to an outsider who can easily move on to a new field of activity should adverse reaction result from his decisions. The men and women in the profession will remain members of the profession all their lives. They cannot avoid the basic responsibility of policy decisions.

I think we can agree that having a sound policy, a course of action, is of importance in dental relations. A little over a century ago, dentistry was not organized as a profession. If the term, public relations, had then been in popular usage, I'm certain that the experts of that day would have agreed that dentistry didn't have good public relations. And the reason is clear.

From the very beginning of the American Dental Association, its leaders recognized the simple fact that public acceptance would come from the adoption of sound policies which resulted in service to the public. It is no accident that the profession of dentistry in the United States today has high standards of practice, that its schools attract students from throughout the world, that its scientific advances have been continuous. It is not just by chance that the quack and the charlatan together with the diploma mill school have been driven into retirement.

Early, the founders of the profession established a policy of service to the public. These men were not content to pay mere lip service to this policy. They enforced it. Often against big odds they enlisted the aid of state legislatures. The dental practice acts of the various states are living tributes to the

far-sighted policies of the founders of the profession. Credit must go to them and also to dental leaders of the present age who have continually fought to retain in day to day practice the high ideals of the profession.

While the public relations program of a dental society, whether it be local, state or national, is the responsibility of the group as a whole, it should never be forgotten that the individual dentist is the key link in any public relations program concerning dentistry. All of us are engaged in public relations every day. The way you greet your patients, the reception they receive when they walk into your office, your participation in community and civic affairs such as the Red Cross, the Community Fund and similar activities—all of these go to make up your individual public relations. Most of these things we do automatically. We don't bother to set up a formalized program. But a plan of action exists just the same. The man who is a successful practitioner usually has excellent public relations. He is conscious of his role in the community and he works at it.

The public relations problems of a group or society are much the same as those of an individual. There must be good performance publicly appreciated. The group must recognize that it must be of service to its members and to the public. Unless the group recognizes this and is of service to both its members and the public, it will not long survive. The public relations of a group, however, does not fall into as recognizable a channel as does those of an individual. In a society, decisions must be made by a group of individuals, individuals often with conflicting interest and opinions.

It is at this point that there is a need for the formalization, for the careful planning of a public relations program which I mentioned earlier. Consideration must also be given to the very important matter of financing the formalized program of public relations. First, the group must decide what its basic programs are to be, and then,

and only then, it must decide on how it is going to inform the public. Of these two steps, the first, or the "X" part of our formula, is by far the more important. Unfortunately, there are a few who still believe that the "Y" part of our formula, the publicity part, should come first.

What can happen in such a circumstance was rather vividly demonstrated not long ago when a small group of members of a local dental society decided that there should be a new school dental program in their community. A society "spokesman" appeared on the local radio with the superintendent of schools and described the new school program. Similar statements were published in the local newspaper. The community was led to believe that the new program was ready to be launched. Then, after all the publicity, the program was considered by the dental society and a majority of the members voted against it. The result was as you would expect. The community was angered. The newspaper, which had cooperated so freely in providing publicity for the new program, ran unfavorable editorials. The superintendent of schools said he could not understand the attitude of the majority of dentists. Parents protested. As a result, this particular society's public relations were considerably worsened instead of improved. Of course, this was an isolated instance, but it does show the danger of concentrating on a publicity campaign alone. Such programs are worse than useless. They can actually be harmful.

There have been cases in which Children's Dental Health Day programs in the United States have consisted almost entirely of publicity. I have received many complaints from mothers that they had read about the need for early and frequent dental examinations and treatment for their children and then found that they couldn't find a dentist who wanted to take children as patients. I think we should bear in mind that no governor's proclamation or poster contest by itself ever arrested

a single case of caries. If we are going to aim for public appreciation of our concern for the dental health of children, we first must make sure that the members of the profession in the community are ready and willing to do something about the dental health of children.

The program of the public relations department, like that of all agencies of the American Dental Association, is operated in support of the basic objective of the Association, that is, "to encourage the improvement of the health of the public and to promote the art and science of dentistry." The public relations program of the American Dental Association, has two major divisions: service to the profession and service to the public. Emphasis is placed on the former because it is primarily through the profession that the general public is reached. It is of prime importance that each member be fully informed of all programs and activities of the national, state and district dental societies. No group can operate effectively and efficiently unless all of its members have full knowledge of what the group is doing and what it is trying to do. Our first public relations task is to have a well-informed and united profession. It is only when there is unity of purpose that we can expect to achieve a real public appreciation of good performance. That is why a major part of the activities of the public relations department of the American Dental Association is devoted to transmitting information to the members of the Association. This information ranges from up-to-the-minute reports of news concerning dentistry to suggestions and recommendations for state and local programs.

In addition, of course, the Association's public relations department carries on a national program of disseminating information on dentistry and dental health through newspapers, radio and television stations, magazines, speeches and other means of mass communication.

For a few moments I should like to

consider some of the more recent public relations activities of the American Dental Association. For several years, the American Dental Association was in the forefront of the battle against the establishment of compulsory health insurance in the United States. The profession took this position because it recognized this as ill-conceived and totally impractical. In this case, the profession made its decision, its policy, and then proceeded to inform the public. Thanks to the overwhelming response on the part of individual members of the dental profession, the public did appreciate the position of dentistry, it did understand the futility of trying to solve the nation's dental health problems under a compulsory government program. The program of the American Dental Association and the dental profession was predicated on two points. First, the reasons why compulsory health insurance would be harmful to the public itself, and second, the need for the development of positive programs which would be beneficial to the public such as increased research, increased dental health education and increased dental care for all segments of the population, particularly for children. This program emphasized repeatedly the principle which dentists have long recognized: that the most logical and effective means of ultimately bringing better dental health to the American people is by increasing dental health education and services for all children.

The fluoridation of community water supplies is an outstanding example of this type of program. When fluoridation was first proposed, there were some men who insisted that the dental profession launch a major publicity program in behalf of this procedure. Wisely, the leaders of the profession refused to jump on a publicity bandwagon and asked Association agencies to make a careful and conscientious study and evaluation of all the evidence. Only after this had been done; only after there was complete assurance of the safety and benefits of fluoridation

did the American Dental Association endorse fluoridation and recommend its use in local communities when approved by the local dental society and the responsible health authorities.

It was in the fall of 1950, at Atlantic City, that the House of Delegates of the American Dental Association unanimously approved and endorsed fluoridation. The wisdom of this decision has been reflected in every bit of evidence that has since been accumulated.

Since the action of the House of Delegates, the American Dental Association has been engaged in a large-scale information program regarding fluoridation. In keeping with the traditional adherence to the principle of local determination and control of community health services, the American Dental Association has provided counsel and information regarding fluoridation but it has not attempted to force fluoridation upon any community where the procedure was not wanted. This, I believe, is a sound attitude. The dental profession does have a good program—the "X" part of our public relations formula—and it has provided a good "Y"—the interpretation or publicity. But the decision still must be made by the public. That is the democratic way.

In some communities where opinion has been sharply divided among dentists themselves, fluoridation has been rejected. Again, I believe this to be a natural reaction. Certainly, if the members of the profession cannot agree on a program, it cannot be expected that the general public can make the right decision thereon.

In explaining the safety and benefits of any health program, it is often necessary to answer and refute the claims of those who, for one reason or another, are opposed to the program. This is particularly true regarding fluoridation. I doubt if any public health measure ever was opposed more violently and by more irrelevant arguments than fluoridation.

It is difficult to assess the real motive of many of those who are oppos-

ing fluoridation. There is a religious group which is opposed because it believes fluoridation is "mass medication," which, of course, it is not. Chiropractors have opposed the procedure ever since the medical profession endorsed it. Others have made profits by selling pamphlets and printed material opposing fluoridation. And, of course, there are those in every community who are always opposed to any new program.

There appears to be practically no limit to the extremes that some opponents of fluoridation are willing to go in their efforts to prevent the adoption of fluoridation. There have been charges that fluoridation would cause "cavities in the head bones," "irritability," "undue financial anxiety," "loss of memory," and that those who favored the procedure were participating in a Communist plot to poison the American public. In the Seattle campaign a year ago, there were even charges that fluoridation caused "satyriasis" and "nymphomania." In one town, it was charged that fluoridation had slowed down the birth rate. Almost at the same time, we had complaints from another town from a father of several children and whose wife was expecting another child that fluoridation was the cause. The ridiculousness of most of these arguments is readily apparent.

Today, fluoridation is in operation in nearly 800 cities and towns in the United States serving approximately 16 million persons.

I have talked at some length about the fluoridation campaign because it does emphasize rather clearly the type of public relations program that a responsible group such as a professional society must carry on. First, we must be sure that we are on absolutely sound ground, and then we must proceed to inform the public of our position and to answer those few individuals who seemingly are ever-prepared to set themselves above scientific evidence.

Public relations is also involved in such problems as providing sufficient

dental manpower for the armed forces of the United States. In seeking a proper solution to this vexing problem, which for some time has required the compulsory draft of many dental practitioners, officials of the American Dental Association have given careful attention to the public relations aspects of meeting the real needs of the military services and at the same time doing everything possible to maintain adequate dental health services for the civilian population.

Dental health education, that is, helping people to help themselves maintain sound dental health, also directly involves the public relations of the profession. In the American Dental Association, there is a separate Division of Dental Health Education which is in charge of the preparation and distribution of dental health education material such as pamphlets, posters, comic books, teaching guides and similar items which are available to individual dentists, teachers, parents and children. Basically, this program is operated to assist the state and district dental societies and individual dentists in providing dental health education for patients and the general public.

One question which often comes up in a discussion of public relations is that concerning paid advertising. Advertising, if adequately financed and repeated often enough, is an effective means of communication to the general public. The extent to which advertising is employed throughout the world is ample evidence of its effectiveness. Advertising is expensive. It must be repeated and repeated. Few dental societies have sufficient resources to carry on the continuous program of advertising that would be necessary to communicate effectively with any substantial segment of the public. Advertising is basically a commercial enterprise. The programs of dental societies are not commercial ventures. Nor are they so treated by the press and radio which print and broadcast much in the way of news of dentistry and often feature special articles or public ser-

vice programs concerning dental health education. Personally, I do not believe that paid advertising should be attempted by a dental society except in rare instances such as the placing of an institutional advertisement commemorating the founding of a new hospital or health center, the anniversary of a dental or medical society and similar events.

The handling of complaints from patients, the referral of patients to dentists, the handling of emergencies at nights and on weekends, the establishment of pre-payment and post-payment plans, the operation of public clinics, the prevention of dangerous "bootleg dentistry" performed by laboratory technicians—all of these are other problems which involve in varying degree the public interest and are directly concerned with the public relations program of the dental society. In each of these, the individual dentist and his dental society have direct responsibilities. First, they must make the decision on the course of action to be taken, and second, they must effectively inform the public of this course of action.

In dealing with the general public we need to remember that there are many different segments of the public. For a state or provincial dental society the most important public or group, as I see it, is the membership of that

society. The individual practitioner is by far the most important element in a public relations program. Only after we have reached the dentists and enlisted them in sound public relations activities, should we move on to other specific groups such as children, parents, teachers and the general public.

In closing, I should like to stress the point that public relations is not the function of a public relations department alone. The department can provide general advice. It can provide technical assistance in the preparation and distribution of information materials. But the basic responsibility for over-all public relations rests firmly with the profession. For that reason, the public relations department of the American Dental Association operates under the direct supervision of the secretary, top administrative officer of the Association.

While I have spent some time posing a number of problems which seem to me to be concerned with dentistry's public relations, I do want to emphasize that in the over-all picture dentistry does have very good public relations. Its problems, while many, are small compared to its accomplishments. The significant achievements of the profession in the past provide ample evidence that it will continue on to new heights in the service of mankind.

Chronic Osteitis: The following is an abstract of a paper entitled "The Significance of Alveolar Osteitis in Rhinology" which paper was read before the Laryngological Section of the Royal Society of Medicine in England: "Chronic osteitis of the maxillary cancellous bone may exist unrecognized, and is usual in cases where pyorrhoea has led to edentulation, often persisting for years. It may lead to inflammatory oedema of the basal antral mucosa which is demonstrable against lipiodel introduced by

Poetz displacement method. The oedema may finally assume the form of a sessile and occupy the whole of the antral cavity, leading to pressure symptoms. Submucous cultures commonly show Strep. Viridans.

"Treatment should be removal of the infected cancellous bone, which is surprisingly well tolerated. Exenteration may also be called for,—a procedure better tolerated when combined with adequate alveolectomy than when done with the infected bone in situ."

The Forum

DIRECT FILLING RESINS: DIMENSIONAL CHANGES RESULTING FROM POLYMERIZATION SHRINKAGE AND WATER SORPTION

by DENTON I. SMITH, B.S., and I. C. SCHOONOVER, Ph.D., Washington, D.C.

Summary of article appearing in J.A.D.A.—May 1953

The direct filling resins shrink approximately 6 to 8 percent in volume during polymerization. The shrinkage does not occur uniformly in all directions, but is concentrated in localized areas. This shrinkage is about four times that of silicate cement, which was found to have a shrinkage of about 2 per cent when measured under the same conditions.

If no strain is present the direct filling resins expand equally in all directions as a result of water sorption. This expansion amounts to 0.3 to 0.5 per cent linearly, or 1.0 to 1.5 per cent volumetrically. If strain is present, the dimensional change due to water sorption is not uniform in all directions and may result in an apparent contraction in one direction.

PROGRESS REPORT ON IMMEDIATE PERMANENT RELINES

by LaMAR W. HARRIS, D.D.S., Chicago, Ill.

Condensed from Jour. of Pros. Dentistry, March 1953

This report is only a progress report on immediate permanent relines since it will take years to arrive at final conclusions.

The best technique our group has found for practical use is to cleanse thoroughly the partial or full denture to be relined, first with soap and water and then with pumice at the lathe. The cleansed, and now slightly roughened tissue surface is again washed with soap and water and dried with an air blast. The surface to which the reline is to be attached is wetted with the monomer of the reline material to a line approximately $\frac{1}{8}$ inch over the flanges and periphery. This will make for a better attachment and create a fine finish line.

The material is mixed according to

the manufacturer's directions and applied to the base in a sufficiently limited quantity to ensure a fine roll without adding bulk to the denture. (Again, as in all plastic material use, it is important to remember that the powders and liquids of various manufacturers' brands are not interchangeable, and each powder should be used only with its own brand of liquid.) Whenever possible the liquids should be kept chilled during storage and the bottles shaken vigorously before portions are measured.

The material should remain on the base outside the mouth until the glaze starts to disappear, at which time it is rinsed in tepid water and inserted in the mouth. If the patient is extremely sensitive to temperature changes or

irritations, a slight coating of glycerine over the material will protect him. The denture is carried to the mouth and guided by gentle pressure and the patient's closure into centric occlusion. It is then muscle-trimmed by the patient's own movements of the tongue and cheek and allowed to remain until the patient reports a feeling of discomfort. The denture is removed and rinsed in cool tap water, and returned to the mouth. The occlusion is rechecked since the material is still pliable enough so the denture may be guided into proper placement.

It may or may not be necessary to make additional removals before the

chemical curing cycle is completed. The elapsed polymerization time can be determined by having the patient hold a small quantity of the excess material in the closed fist until it hardens. The mouth curing cycle will be found to be the same, and the denture may be removed, adjusted and polished, and returned immediately to the patient.

Of the many dentures treated in this manner, in not one denture has there been a separation of the material from the denture base, nor have there been any signs of tissue irritation from these relines.

FOCAL INFECTION — PRACTICAL CONSIDERATIONS

by DAVID F. MITCHELL,* D.D.S., Ph.D., University of Minnesota School of Dentistry,
Minneapolis, Minnesota

Reprinted from North-West Dentistry, April, 1953

In two recent reports,^{1,2} the literature relating oral disease as a causative factor to systemic disease has been reviewed carefully. The authors and their several consultants from different specialized fields of dentistry and medicine made every effort to distinguish between fact and fancy. Admitting the dangers of over-simplification, the following is an attempt to present a brief working knowledge of this topic.

On the strength of our present knowledge:

1. We cannot ignore the existence or possible importance of the process of focal infection. We must not overestimate the importance of this concept. More controlled research is needed.

2. Pathology in the oral cavity or anywhere else in the body should be prevented or eradicated regardless of its relationship to systemic disease.

3. Bacteremia occurs as a result of manipulation (e.g. scaling) and extraction of teeth. The chances of bacteremia

occurring are increased if infection around the teeth is present. Bacteremia is more likely to occur if extensive surgical procedures are used, than if conservative steps are taken.

4. Bacteremia may result in subacute bacterial endocarditis. Patients with a history of rheumatic fever (with attendant cardiac valvular defects are especially prone to develop subacute bacterial endocarditis. Treat them conservatively, surgically speaking, and use antibiotics before and after surgery or other manipulations. Employ consultation freely.

5. Sick people should receive every benefit of the doubt. Persons with chronic ailments (e.g., diabetes, chronic leukemia) should have detectable disease processes in the mouth (or elsewhere) removed. This is not an advocacy of the extraction of a sound tooth with a healthy periodontium.

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1. Easlick, K. A., and others: An evaluation of the effect of dental foci of infection on health. *J.A.D.A.*, 42:609 (June) 1951.
2. Mitchell, D. F., and Helman, E. Z.: The role of periodontal foci of infection in systemic disease: an evaluation of the literature. *J.A.D.A.*, 46:32 (Jan.) 1953.

*Dr. Mitchell is chairman of the division of Oral Histology, Oral Pathology and Oral Diagnosis.

THE EFFECTS OF PREMATURE LOSS OF PRIMARY TEETH AND SEQUENCE OF ERUPTION OF PERMANENT TEETH ON MALOCCLUSION

by SIDNEY M. KRONFELD, D.D.S., New York City

Summary of article appearing in Journal of Dentistry for Children — First Quarter 1953.

In any discussion or study of the problem of space maintenance, several factors seem to be relevant. During the course of clinical study of a large group of children over a period of fourteen years, some of these factors appeared in the records. The findings are not conclusive, but rather are a contribution of data collected, together with some observations thereon.

SUMMARY

1. The primary teeth apparently are shed earlier, and the succedaneous teeth apparently erupt earlier than has been previously reported.

2. The greater the interval of time between the normal shedding of a primary tooth and the eruption of the succedaneous tooth, the greater the likelihood of malposition of that particular tooth.

3. The order of eruption of the permanent canines and bicuspid has little or no influence upon the development of malocclusion.

4. All prematurely lost primary canines and molars should be replaced by space maintainers immediately, whenever possible, without any period of watching and waiting to see what happens, since very early repature loss of a primary tooth results eventually in delayed eruption of the succedaneous tooth, probably in malposition, unless an adequate space maintainer is used.

5. Premature loss of a primary tooth within one and one-half years of its normal shedding time usually results in hastening of the eruption of the succedaneous tooth.

Although this study started with a total of four hundred cases, the incidence of the individual factors studied was relatively low. It is evident that perhaps thousands of cases should be studied in order to accumulate sufficient data from which conclusive deductions may eventually be made.

THE CRESTS OF THE INTERDENTAL ALVEOLAR SEPTA

by BERYL RITCHIE and BALINT ORBAN

Conclusions and summary of article appearing in The Journal of Periodontology, Apr. 1953

1. In the absence of periodontal disease the configurations of the crests of the inter-dental alveolar septa are determined by the relative positions of the cemento-enamel junctions.

2. In the presence of periodontal disease alterations in the configuration of the inter-dental alveolar septa are governed principally by the specific pathological process.

3. Assuming mesial and distal contacts between the teeth, no correlation is believed to exist between occlusal disharmonies and the roentgeno-

graphic appearance of the crests of the inter-dental alveolar septa.

Roentgenographic and histologic material was presented to illustrate the influence exerted on the configuration of the inter-dental alveolar septa by variations in the shape, state of eruption, and position of the teeth; by some of the periodontal diseases; and, by disharmonies in occlusion.

Emphasis was placed upon the necessity of a critical evaluation of roentgenograms presented as evidence of the existence or the character of occlusal disharmonies.

ANNOUNCEMENTS

● The **MONTREAL ALUMNI CHAPTER** will have a "Hospitality Room" for the members of the Alpha Omega Fraternity in the Mount Royal Hotel for the duration of the Joint Meeting of the Canadian Dental Association—Montreal Fall Clinic being held in Montreal October 18th to 21st, 1953.

● **GOLF MEET, C.D.A.-M.D.C. MEETING IN MONTREAL.** Facilities for golf will be arranged for all interested at a nationally known course for Sunday, Monday and Tuesday (Oct. 18-20). Attested score-card will be handed in and the cups presented at the Montreal Dental Club Luncheon on Wednesday, 21st of October.

● **AMERICAN DENTAL ASSOCIATION CONVENTION** at Cleveland, Ohio, September 28 to October 1.

● **10th ANNIVERSARY MEETING OF THE AMERICAN INSTITUTE OF DENTAL MEDICINE**, Palm Springs, California, October 25-29. For information apply to the Executive Secretary, 2240 Channing Way, Berkeley 4, California.

● **UNIVERSITY OF TORONTO DENTAL ALUMNI ASSOCIATION** Annual Meeting Dinner and Dance, Friday, October 16, Homecoming week-end.

● **EASTERN ONTARIO DENTAL ASSOCIATION CONVENTION** will be held at Chateau Laurier Hotel, Ottawa, September 20, 21, 22.

● The **SECOND INTERNATIONAL DENTAL CONGRESS** in Mexico City sponsored by the Mexican Dental Association, will be held Nov. 15-21, 1953.

● The **AMERICAN ACADEMY OF DENTAL MEDICINE** will hold its Mid-Winter Meeting and Luncheon on Sunday, December 6, 1953, at the Hotel Statler, N.Y.C. "Geriatrics" will be the theme of the scientific session.

All interested dentists and physicians are cordially invited to attend. For details and reservations address the National Secretary, Dr. William M. Greenhut, 124 East 84th Street, New York 28, New York.

● **SHORT POST-GRADUATE COURSE IN ORAL DIAGNOSIS AND ORAL SURGERY**, October 26th to 31st 1953, Faculty of Dental Surgery, University of Montreal.

Following the meeting of the Canadian Dental Association in Montreal, the Faculty of Dental Surgery, U. of M., is offering a one-week course in Oral Diagnosis and Oral Surgery from October 26th to 31st 1953.

Two outstanding clinicians have been invited to deliver lectures and present clinics on patients during that course:

Dr. Edward V. Zegarelli, Head of the Diagnosis and Radiology Department, School of Dental and Oral Surgery, Columbia University, New York; and

Dr. S. Daniel Seldin, Consultant to different Hospitals in New York City and practicing exodontist of international reputation.

Dates: October 26th to 31st 1953. Inscription fees; \$75.00. Maximum number of inscriptions: 20.

For information, apply to Dr. Ernest Charron, Dean, Faculty of Dental Surgery, University of Montreal, Postal Box 6128, Montreal 26, P. Q.

THE GEORGE GRIEVE MEMORIAL LECTURE

● For the third consecutive year the Orthodontic Section of the C.D.A. is perpetuating the memory of the great contributions made to the science of orthodontics by the late Dr. George Wellington Grieve. Following outstanding lectures by Dr. Gerald Franklin of Montreal and Dr. Spencer Atkinson of Pasadena, California, one of Canada's foremost orthodontists, Dr. G. Vernon Fisk, will address this year's Canadian Dental Association Convention.

Taking as his subject, "Recent Trends in Orthodontics," Dr. Fisk will lecture to the assemblage on Monday, October 19th, at 4:15 p.m.

Dr. G. Vernon Fisk is well known to Canadian dentists. Following graduation he indentured with the late Dr. Grieve for three years before commencing his own practice in orthodontics. While combining a fruitful teaching career with active practice he has still found time to be a president of the Great Lakes Society of Orthodontists and chairman of many C.D.A. committees before attaining its presidency.

Dr. Fisk's lecture will be of great interest to orthodontist and general practitioner alike.



MATTHEW HENRY GARVIN,
D.D.S., F.I.C.D.

From time to time our Association has been blessed with a member who, because of natural ability and circumstance, has been able and willing to render it a service above and beyond that which might reasonably be expected of him. Such a man is Doctor Harry Garvin, of Winnipeg, who has retired recently as Editor-in-Chief of the Journal. Harry was born at Newcastle, Ontario, of Irish and Canadian parents. His family moved to Hamilton where he received his elementary education and while still in high school he commenced to prepare for a life in which art and science are interwoven by attending the School of Art, having won a scholarship in a public school contest. He was graduated in Dentistry from the University of Pennsylvania in 1902—and from the University of Toronto in 1903. Harry moved to Winnipeg in 1903 where he is still in active practice. For many years he has been associated in "group practice" under the name of Drs. Garvin, Johnson & Brown, having devoted his personal efforts largely to the specialty of periodontics.

Harry has been President of the Canadian Dental Association, the Winnipeg Dental Society, the Manitoba Dental Association, the Western Canada Dental Society (twice) and the American Academy of Periodontology. In 1918 he

won a prize in competition in Canadian Dental Research, and has served on the Associate Committee on Dental Research of the National Research Council of Canada—his term finishing in 1953. Harry was made an Honorary Member of the Canadian Dental Association in 1952, the British Dental Association in 1952, the Dental Society of Western Canada in 1953. He is a Fellow of the International College of Dentists. Twenty-one original papers on Dentistry by him have been published in journals in addition to those published in the C.D.A. Journal.

He was the representative of Canada at the First Empire Dental Conference in London, England, 1930.

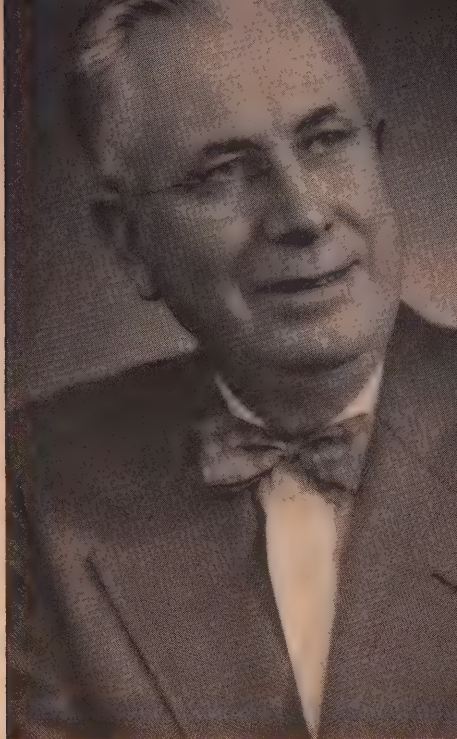
He is Chairman of the Official Board of Bethesda Church, a member of the General Council of the Canadian Sunday School Mission and is a member of the Manitoba Board of the Inter-Varsity Christian Fellowship.

With such a background it is not surprising that he was able to achieve so much success as Editor-in-Chief of the Journal of the Canadian Dental Association — which Journal he assisted in organizing in 1935 and which has helped to place Canadian Dentistry among the leaders the world over.

His zeal for his beloved profession and his willingness to make personal sacrifice in its behalf have not waned, and it is little wonder that we all feel such extreme regret that he has retired from this important position. Every member of the profession will say from the heart—thank you and well done, Harry!

K.M.J.

THOMAS ROBERT MARSHALL,
D.D.S., F.A.C.D.



With the January issue of 1935 the Journal of the Canadian Dental Association came into existence—in February of that year Tom Marshall was appointed Associate Editor for Ontario. It may truthfully be said that he has been active since the inception of the Journal. His interest has never waned over the years and he has been untiring in his efforts to report the doings of his chosen profession in the province of Ontario.

Attending faithfully the meetings of the different dental organizations and ever on the outlook for suitable material for publication, he has been instrumental in procuring a great number of articles for the pages of the Journal. He has also contributed many articles of his own as well as a monthly summary of the dental news of the province.

In May 1942, he was appointed As-

sistant Editor—the position he holds on his retirement. It is over a year since, due to his health, Tom tendered his resignation. Typical of him, he has carried on until the Committee on Publications could make suitable arrangements to relieve him of his duties.

In 1950 in recognition of his services to the profession, he was made a Fellow of the American College of Dentists.

Although Tom Marshall, on June 30th, officially severed his connection with the Journal, his interest and his willingness to help along the work will be just as keen as ever.

The dentists of Canada appreciate what he has done over the years and for his untiring interest, his faithful service and his contribution to the profession; on their behalf we express to him their sincere gratitude.

H. W. R.

No good thing is ever lost. Nothing dies, not even life which gives up one form only to resume another. No good action, no good example dies. It lives forever in our race. While the frame moulders and disappears, the deed leaves an indelible stamp, and moulds the very thought and will of future generations. —Samuel Smiles



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Editorial

MONTREAL — OCTOBER 18th to 21st

Once again the Canadian Dental Association will be meeting in convention, this time in Canada's largest city of Montreal. Combining modern conveniences and practicality with an abundance of old world charm, this metropolis makes an ideal location for such a conclave. Under the auspices of The College of Dental Surgeons, P.Q., this joint meeting of the Canadian Dental Association and the Annual Montreal Fall Clinic will be held in the beautifully appointed Mount Royal Hotel, October 18th to 21st.

Many years ago the great Sir William Osler commented, metaphorically, on the subject of Society Meetings:

"We doctors do not take stock often enough and are apt to carry on our shelves out of date goods. The Society helps to keep a man up to the times and enables him to refurbish his shop with the latest wares. It keeps his mind open and receptive and counteracts the tendency to premature senility which is apt to overtake the man who lives in a routine."

Although the above statement was prepared originally for physicians it is equally as applicable to practitioners of dentistry. Continuing education is a requisite for anyone engaged in the practice of a health profession. We owe it not only to ourselves, but to those who entrust their dental health care to us to be cognizant of, and conversant with, the latest knowledge pertaining to our field.

It is difficult to understand the reasoning which prompts some individuals to absent themselves from virtually all meetings associated with dentistry. This difficulty becomes an impossibility when one considers the vast amount of time and effort given voluntarily by those accepting responsibility for the conduction of such gatherings.

It has been stated that the vast distances to be travelled in Canada mitigate against satisfactory attendance and, undoubtedly, this fact is true. However, one

Canadian centre which is annually host to a large dental convention has usually fewer than 40 per cent of its resident dentists in attendance. No effort is spared to obtain diversified and well-qualified clinicians. The social activities too, are organized and conducted in order to give the maximum amount of pleasurable enjoyment. Yet the attendance remains small.

It seems superfluous to suggest that these conventions are arranged and conducted by a small number of dentists for the benefit of the rest of the profession and the maximum of support which is given by the profession is really in its own enlightened self-interest. Dental practice and its organizational structure in a world of changing economics and ideologies merit the sincere interest of all practitioners. This interest is made most apparent by attendance at association conventions and by taking an active part in the deliberations of the association.

In Montreal, next month, the Canadian Dental profession again has an opportunity for active participation in Canadian Dental Association affairs. The Board of Governors' Meeting preceding the actual convention from Wednesday October 14th, and the official meeting of the Association which follows, both offer opportunities for participation. The Committee charged with the programme responsibility has done its work well. Essays, group clinics, and table clinics have been arranged to create a maximum of interest for everyone. The fiftieth anniversary of the founding of the University of Montreal will be commemorated by the presentation of a large number of varied clinics and demonstrations in the Faculty of Dentistry Building. Many exhibitors have reserved space and much will be learned in their presentations respecting new products and services for the dental profession.

No convention, either, is complete without its social functions and the committee, also, has provided well for this purpose. A Sunday Evening Musicale, President's Reception and Dinner Dance, two official luncheons, an art exhibit and a Ladies' programme have all been arranged for the enjoyment of the conventioners.

The October meeting in Montreal then, offers an opportunity for Canadian dentists to augment their knowledge for adaptation to the demands of their profession.

BOOK REVIEWS

The Successful Practice of Dentistry by S. Joseph Bregstein. Published by Prentice-Hall, Inc. New York. Price: \$5.00. Pages 400.

The author outside of lectures to Dental Societies, and activities in The New York State Dental Society, American Society of Dental Medicine, is a practising dentist, of over twenty-five years' experience. This record in itself should recommend this book.

He states that 88% of business failures in 1949 were due, not to a lack of knowledge of the product but poor business management. "The dentist of to-day must necessarily give strict attention to this important phase of his vocation".

"Efficient control of practice is a problem which confronts every dentist".

"You must prepare yourself to organize and control your practice in an *Executive* capacity".

To the undergraduate and recent graduate I would recommend this book. The older dentist might say "Elementary, my dear Watson". I wonder?

R. P. LOWERY.

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Gingivitis In Military Personnel With Special Reference To Ulceromembranous Gingivitis by J. J. Pindborg. Published in Copenhagen, Denmark by C. A. Reitzel.

This book contains a great deal of detailed information regarding the incidence of gingi-

vitis in military personnel and is illustrated by numerous graphs and charts. The author assesses the various methods of attempting to classify gingivitis quantitatively and in this work performed all the examinations himself in an attempt to achieve uniformity throughout the investigation. He considers ulceromembranous gingivitis the best term for the disorder and that a separate classification is essential due to the supposition that there are special etiological factors to be considered.

The effects of seasonal influences, age, occupation, calculus, smoking, irregular positions of teeth, areas of food impaction and erupting third molars are all considered. Tooth brushing appeared to reduce the incidence of gingivitis but had no effect on that of the ulceromembranous type.

It is shown that whilst the stay of military personnel at the recruit schools on the whole did not cause specific deviations from the normal, there is a—sometimes very violent—increase in the incidence of ulceromembranous gingivitis when the enlisted men are trans-

ferred to camps or ships. The author found that about 90 per cent of the cases of ulceromembranous gingivitis originated from a simple marginal gingivitis present in advance.

G. B. SHILLINGTON, LT. COL.

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A Text-Book for Dental Assistants by Irwin Robert Levy. Published by Lea & Febiger, Philadelphia. Pages 272. Price \$4.00.

Dr. Levy in his book, "Text-Book for Dental Assistants," has clearly described the duties of a nurse in a dental office. He has shown the manner of doing specific tasks efficiently and competently.

To the beginner, his book will be valuable as he has given the Science of Dentistry simply, so that a layman would be able to understand the fundamentals.

To those familiar with the duties of Dental Assisting, his book will prove a ready and convenient handbook to help in the complete understanding of new problems or situations.

IRENE MCKENZIE.

ROYAL CANADIAN DENTAL CORPS NEWS

1. Promotion of Lieut.-Col. K. M. Baird, O.B.E., C.D., to the rank of Colonel has been announced coincidental with his posting from No. 12 Coy. R.C.D.C. Halifax, to No. 13 Coy. R.C.D.C. Trenton, as Command Dental Officer.

Colonel Baird graduated from the University of Toronto in 1935 and was appointed to the Canadian Dental Corps in 1939. He proceeded overseas early in the war and held a series of appointments with dental units in the United Kingdom and Northwest Europe.

Since the war Colonel Baird has served as Deputy Director of Dental Services at Army Headquarters, Commandant of the R.C.D.C. School and Command Dental Officer, Eastern Command.

He is married and has three children.
2. Major C. W. McCrary, C.D. of Montreal has been promoted to the rank of Lieutenant-Colonel and appointed Senior Operator in No. 15 Dental Company in Montreal.

Lieut.-Col. McCrary was born in Florence, Ont. in August 1903. He attended the University of Toronto, and after graduation in 1926, spent a year at the Eastman Dental Clinic in Rochester, N.Y. Afterwards, he resided in London, Ont.

He joined the Canadian Army in 1940,

going overseas in 1942. He served in the United Kingdom and later in Northwest Europe attached to the Canadian Grenadier Guards (22nd Armoured Regiment). At the war's end he served at Headquarters Canadian Forces in the Netherlands.

Since the war, he has served in London, Ont. and Montreal, Que. areas.

3. Lieut.-Col. H. L. Harris of Kentville, N.S. has been posted to Eastern Command as Command Dental Officer replacing Col. Baird. Lieut.-Col. Harris was formerly Command Dental Officer, Central Command.

4. Lieut.-Col. G. B. Shillington has been appointed Commandant of the R.C.D.C. School. He was formerly Senior Consultant in the office of the Director General of Dental Services.

5. Major H. W. Hart, on strength of the R.C.D.C. School, has returned from a six-month specialized course in Prosthodontics at the U.S. Naval Dental School, National Naval Medical Centre, Bethesda, Maryland.

6. Lieut.-Col. I. A. L. Millar of Halifax and Ottawa, Officer Commanding 27 Canadian Field Dental Unit, recently represented Brigadier E. M. Wansbrough at the Federation Dentaire Internationale

(Armed Forces Dental Service Commission) in Oslo, Norway.

7. The following 1953 graduates from Canadian Universities have been granted commissions in the R.C.D.C. (A.F.):
University of Alberta—

H. G. Jorgenson, M. P. Quinn. Posted to No. 11 Coy. Calgary, Alta.

Dalhousie University—

J. R. Cowan, G. T. Crossman, C. R. Pugh. Posted to No. 12 Coy. Halifax, N.S.
University of Montreal—

R. Dufresne, E. Gosselin, J. B. Meunier. Posted to No. 15 Coy. Montreal, Que.

8. Winner of the Moore Trophy for 1953.

The Moore Trophy, an award for the most efficient Reserve Dental Unit in Canada, was won this year by No. 1 Com-

pany, R.C.D.C., commanded by Lieut.-Col. H. L. Windrim of London, Ont.

Competition for this trophy is open annually to all Reserve Dental Units. Judging is carried out in April of each year and assessment is made by tests set by Army Headquarters and based on the annual General Staff Training Directive, the general administration of the unit, and unit initiative.

9. All personnel who served with the C.D.C. during the years 1939-45 are requested to submit in writing any knowledge of the spectacular, the unique and the amusing life in the C.D.C. during that period. All communications to be forwarded to the Director General Dental Services, "B" Bldg., N.D.H.Q., Ottawa.

CANADIAN DENTAL ASSOCIATION NEWS

FROM THE OFFICE OF THE SECRETARY

Canadian Sickness Survey—1950-51 —

The initial results of the Canadian Sickness Survey have been published. The survey was conducted by the Dominion Bureau of statistics and the Department of National Health & Welfare.

The survey method consisted of personal visits by trained lay enumerators to a sample of approximately 10,000 households distributed throughout each of the 10 provinces in metropolitan, small urban and rural areas. Some 14 monthly visits were made by the enumerators to these households and over 80 per cent remained in the survey throughout the period.

The figures are expanded from the survey data giving estimates for the whole of Canada. The expenditures recorded in the survey were actual payments made by individuals during the survey period.

The estimated figures produced represent actual payment for health services and furnish a valuable basis for study. Interesting deductions can be made from the figures established. For example, the reported total amount paid to members of the dental profession for the year of the survey is \$32,900,000 which divided by 5000 (approx. no. of dentists in Canada, 1950-51) gives an average of \$6,580. The total amount reported as being paid to medical practitioners during the same period is \$87,800,000 which divided by 14,000 (approx. no. of medical practitioners in Canada 1950-51) gives an average of \$6,265. Monies paid into pre-payment plans are not included in these figures.

These averages, while interesting, do not represent the true situation owing to the difficulty in establishing the approximate number of actual practitioners. The approximate number of practitioners given for the year of the survey are overall figures. A sizeable percentage of members in both professions are otherwise engaged than in actual practice. As a consequence, the average amounts actually paid to practitioners would be higher in both professions.

Dental health services cost the public the third highest total amount per year being exceeded by physicians services and hospital care, the ratio of cost being approximate 11 (physician) to 6 (hospital) to 4 (dentist). In addition to these amounts paid directly to physicians and hospitals, almost half as much again was paid into pre-payment plans for physician and hospital services.

For survey purposes a family was defined, in conformity with the 1951 census, as husband and wife (with or without unmarried children) being together in the same housekeeping unit. All other persons, even if living with a related family in one household, were classified as single persons. Each such single person, and each family is thus counted as a family unit.

Some 1,259,000 or only 27.6 per cent of the estimated total of 4,500,000 family units expended monies for dental services during the year of the survey. By comparison 52.6 per cent of these family units paid for physicians services and 15 per cent for hospital services.

The estimated average expenditure per family unit for the three services is reported as follows:

	All Sizes \$	Size of Family Unit				
		1 pers. \$	2 pers. \$	3-4 pers. \$	5-6 pers. \$	7+ pers. \$
Physicians						
Services	36.60	25.00	38.60	38.80	37.80	39.20
Hospital						
Care	68.10	87.30	84.70	60.70	65.20	60.70
Dental						
Services	26.20	21.50	26.80	28.30	25.30	20.60

If the amount spent per family unit is divided by the number of individuals in the family unit it is startling to see how the level of dental care even among this favored 27 per cent must depreciate in the larger families to next to nothing.

One person family unit	21.50 ea.
Two person family unit	13.40 ea.
Three to four person family unit	9.43 to 7.07 ea.
Five to six person family unit	5.06 to 4.21 ea.
Seven + person family unit	2.94 less ea.

These figures should be studied in the light of the established cost for good dental care suggested by the C.D.A. Health Insurance Studies Committee.

The importance of these compiled data lies in the fact that future calculated costs of health services will probably bear a definite relationship to them.

C.D.A. Pension-Assurance Plan:—"The latest Annual Report of the Dominion Superintendent of Insurance having just become available, we feel that the following expense ratio figures taken from that Report and forwarded by the Administrator will be of interest:

The Companies indicated transact more than 90 per cent of the total of all life assurance and annuity business in Canada, and the figures relate to Canada only:

Company	Cost of	Percentage which Commissions take of Total Premium
	Commissions and Agency Expenses	
A	\$ 4,405,730.00	11.9%
B	5,010,097.00	15.6%
C	5,486,552.00	13.4%
D	2,706,562.00	15.4%
E	7,586,106.00	16.9%
F	7,066,503.00	13.9%
G	9,119,615.00	13.5%
H	3,951,189.00	12.9%
I	5,651,181.00	15.5%
J	16,084,582.00	10.4%

In contrast to these figures, the expense allowance to the **C.D.A. Plan** was only 2.6 per cent of the premium income for the first year of operation.

The administrator has asked that it be emphasized that the C.D.A. Plan is available to the Profession at the lowest rates in North America only because of this **great saving in cost of operation**. This low cost can be maintained only by the active personal support of the Plan by the Membership.

Any form of assurance is available under the C.D.A. Plan, but the Members must take the initiative in making enquiry because the enormous cost of a force of agents cannot be borne and still offer assurance at the great savings for equal benefits of the C.D.A. Plan."

Dr. H. E. Clark Appointed to Board of Governors — Official notification has been received from the Registrar for Prince Edward Island that Dr. H. E. Clarke of Summerside has been appointed Representative for that province to the C.D.A. Board of Governors. He succeeds Dr. J. P. Millar. Dr. Clark graduated at Dalhousie University in 1930 and has practised at Summerside since, except during the war years when he served in the Royal Canadian Dental Corps.

Additions to the Library

- Dale, A.—An introduction to social biology. 1953. 434 p. illus.
- Fairbrother, R. W.—A textbook of bacteriology, 6th ed. 1952. 484 p. illus.
- Giles, G.—Begin now—to enjoy tomorrow. 1951. 57 p. illus.
- Glickman, I.—Clinical periodontology. The periodontium in health and disease. 1953. 1019 p. illus.
- Howard, M. E. ed.—Modern drug encyclopedia and therapeutic index. 5th ed. 1952, 1431 p.
- Lewis, R. and Maude, A.—Professional people. 1952. 294 p.
- Mayo Committee on Dietetics.—Mayo Clinic Diet Manual. 1949. 334 p.
- Morton, L. T.—How to use a medical library. A guide for practitioners, research workers and students. 2nd ed. 1952. 44 p.
- Ostlere, G.—Anaesthetics for medical students. 2nd ed. 1951. 108 p.
- Schlosser, R. O. and Gehl, D. H.—Complete denture prosthesis. 1953. 511 p. illus.
- Simmons, J. S. ed.—Public health in the world today. 1949. 332 p.
- Smith, E.A.—A manual on dental metal-lurgy and non-metallic materials. 6th ed. 1947. 391 p. illus.
- Sonesson, A.—Odontogenic cysts and cystic tumours of the jaws. A roentgen-diagnostic and patho-anatomic study. 1950. 159 p. illus.
- West, G. I.—The dental assistants' handbook. 1946. 108 p. illus.
- Asgis, A. J.—Public health and dental programs in industry. 1953. 54 p.

Bregstein, S. J.—The successful practice of dentistry. 1953. 400 p.
 Bunting, R. W.—The story of dental caries. 1953. 94 p.
 Buxton, J. L. D.—Handbook of mechanical dentistry. 1921. 269 p. illus.
 Heron, W. T.—Clinical applications of suggestions and hypnosis. 2nd ed. 1953. 137 p.
 Kunin, R., and Myers, R. J.—Ion exchange resins. 1950. 212 p. illus.

Nyquist, G.—A study of denture sore mouth. 1952. 154 p. illus.
 Toms, Sir C. S.—A manual of dental anatomy. 8th ed. Edited by H. W. M. Tims, and C. B. Henry. 1923. 547 p. illus.
 Underwood, B.—Dentistry. Students' synopsis series. 1920. 216 p. illus.
 Wallis, C. E.—An atlas of dental extractions with notes on the causes and relief of dental pain. Text, 26 p. Plates, 11. 1919.

NEWS FROM THE PROVINCES

ONTARIO

Dr. Elmer J. Henderson of Aurora was elected 1953-54 president of the **Academy of Dentistry, Toronto**. Other officers elected for the coming year are: Dr. James W. Smith, president elect; Dr. J. Bevan King, Vice-President; Dr. Harvey H. Milburn, secretary; Dr. Fred T. Pearson, treasurer; Dr. R. W. Marshall, Dr. W. A. Weir, Dr. R. G. Harris, Dr. J. A. Bigelow, Councillors; Dr. Charles McLean, Chairman of Blue Cross; Dr. Spencer Gray, Chairman of Dental Public Health.

Dr. D. A. Cheetham of Owen Sound was elected president of the Grey, Bruce and Dufferin Dental Society at the annual meeting of the society at the Owen Sound Golf and Country Club.

The election of officers followed a dinner meeting at the club after the members played golf in the afternoon or motored to Lion's Head for a boat trip. About 60 members attended.

Other officers elected were: vice-president, Dr. E. J. Weiler of Moldmay; secretary, Dr. W. Bedell of Owen Sound; directors, Dr. M. Hawton of Collingwood, Dr. Stewart of Thornbury, Dr. W. E. Bruce, of Kincardine, Dr. A. Dixon of Walkerton and Dr. G. Hind of Walkerton.

Dentists to Learn More About Children's Dental Care — A plan to make available to Ontario's practising dentists information about the newest developments in the dental care of children is being worked out by the Faculty of Dentistry of the University of Toronto and will be supported by a federal health grant.

In making the announcement of federal assistance, Hon. Paul Martin, minister of National Health and Welfare, stated that the plan provides for the zoning of the province and the organization in each zone of an intensive two-day course of instruction for the dentists practising in that area. Both lectures and practical demonstrations will be given by specialists and general practitioners who are Faculty of Dentistry staff teachers in their particular subjects. Special emphasis will be placed on preventive dental care for children.

The zones to receive the courses first will be those more remote from large cities but which have an organized public health program.

The need for more attention to prevention of dental troubles among children has frequently been advanced by public health workers and is supported by the report of the Ontario health survey committee, Mr. Martin said. He commended the "vision and initiative" of the Dental Public Health Committee of the Ontario Dental Association and the Faculty of Dentistry in planning the courses of instruction.

Cost of the project is estimated at \$2,500 this year.

The **Ottawa Dental Society** recently elected the following members to executive positions:

President—Dr. Rex Slemon.
 Vice-Pres.—Dr. M. Derrick.
 Sec. Treas.—Dr. A. Slone.

Exec. Comm.—Dr. J. R. Callingham, C. A. Findlay, J. C. McCavour, H. B. Squires, C. E. Woods, J. H. Young.

Repres. Can. Dental Corps, Lt. Col. G. B. Shillington.



DR. E. A. GRANT

Dr. E. A. Grant Retires as Director of Dental Services—Toronto

On the retirement of Dr. E. A. Grant from the position of Director of Dental Services for the City of Toronto on July 31, 1953, the municipality is losing a conscientious and valuable administrator. Dr. Grant placed his profession foremost in his thoughts and succeeded in making his Division in the Department of Public Health second to none. He was watchful for any advanced ideas in conducting his service and had a happy faculty of separating the practical ideas from the fads and fancies. He had the ability to maintain harmony within his staff and held their respect and loyalty to himself and to the Department so that everyone gave of his best services to the children who came under his care. One heard little public criticism of the services rendered in the Dental Public Health Department. He took command of the Division of Dental Services in August, 1921, and in June, 32 years later, was tendered a farewell dinner by his staff at the Albany Club, when he was presented with a purse of gold to be used for a Television set, if desired. He graduated in 1906 receiving the degree D.D.S. from the University of Toronto and remained in the general

practice of dentistry before taking office with the City of Toronto.

During these years he lectured at both the Faculties of Medicine and Dentistry. Together with Dr. Harry S. Thomson and in co-operation with the faculty of Dentistry, University of Toronto, he was instrumental in starting the Course in Dental Public Health in the School of Hygiene, University of Toronto, and was for some years Associate Professor in Dental Public Health. Through this course it was possible for dentists to gain a Diploma in Public Health which qualified them for positions in public service.

While in practice he received the confidence and trust of his patients. He gave of his utmost ability as a dentist and received the gratitude of those he served. They had a deep sense of loss when he retired and entered the broader field of public service.

He was always available to help in any movement for the betterment of dentistry and served on many dental committees. His judgment and his counsel were respected. He rose to the office of President of the Academy of Dentistry, Toronto in 1933-34, and further served on the Committee of the Ontario Dental Association becoming President in 1942-43. For many years he was Secretary of the Canadian Dental Research Foundation, during which time many bulletins on dental research were published. The value of this work to the dental profession cannot be estimated in monetary values. Also the Canadian Dental Hygiene Council flourished under his close co-operation with the Field Secretary, Dr. Harry S. Thomson. He was Secretary-Treasurer of the Canadian Dental Association from 1920 to 1924.

He made many contributions to dental literature and in 1952 forwarded a paper on Dental Public Health to be read at the meeting of the Federation Dentaire Internationale. It was much to his regret that he was unable to be there in person.

During the first world war he gave up practice to serve overseas four years with the Canadian Army Dental Corps and at the conclusion of hostilities he retired with the rank of Captain.

On August 3, 1947 he was honored by the American College of Dentists by being elected a Fellow for the valuable services he had rendered to his chosen profession. He was President of the Toronto Central Lions Club in 1939.

Dr. Grant had a desirable capacity for making friends. He is modest and retiring but attracts and holds the friendship of people, which when once made ever grows deeper.

In your retirement, Ed, your confrères wish you the happiest of years to follow in the companionship of your good wife. May those years be many and crowded with useful leisure. A. D. A. Mason

BRITISH COLUMBIA

Dr. P. W. Arkle of Toronto has been appointed dental director of the Central Vancouver Island Health Unit, it has been announced by Dr. E. W. R. Best, Unit Medical Director. Dr. Arkle formerly practised in Toronto and was a member of the staff of the faculty of dentistry at the University of Toronto.

In June twenty-six candidates passed the **College of Dental Surgeons** examinations entitling them to practise in B.C. as soon as they are licensed. They include graduates of the five Canadian and three U.S. dental schools. Two candidates passed the examinations for dental hygienists which were held at the same time, and may practise in the offices of registered dentists.

On July 12th the **Fraser Valley Dental Society** held a summer outing at Dr. Tony Newby's home on the Vedder Road,

Chilliwack. The affair took the form of a family picnic which included wives and children. Swimming, followed by a picnic supper, was enjoyed by a large turn-out.

The triennial **Pacific Coast Dental Conference** will convene in Banff next June. Participating are the eight western states and Alberta and British Columbia. Dr. D. J. Sutherland of Vancouver is the Councillor for B.C. At the first meeting of the new executive of the B.C. Dental Association held on June 11th, it was decided to have the provincial convention in Victoria during the last two weeks of March, so that the dates of the two conventions would not conflict.

D.H.M.

SASKATCHEWAN

Sodium fluoride is now being added to the Assiniboia water supply, H. Ostlund, Mayor of the Town, and Dr. M. K. Dehnell, Regional Medical Health Officer, jointly announced recently.

BRITISH COMMONWEALTH NEWS

British Government White Paper Urges Fluoridation for England—Fluoridation of public water supplies was recommended for England in a British government White Paper issued last week. The report was based on findings of a five-man official British mission which made a month's study of the subject in the United States last year. The mission was headed by Dr. H. H. Stones, editor of the **International Dental Journal** and dean of the faculty of the University of Liverpool. The report declared that fluoridation as a method of reducing dental decay is beneficial. Noting that the procedure would have to be adapted to conditions in England, the report recommended that the program should first be conducted in selected areas "to allow a carefully controlled investigation to be carried out . . . in spite of the fact that the evidence of harmlessness is so strong as to be almost conclusive."

Australia Leads World in Sugar Consumption—Refined sugar consumption in Australia, Cuba and Sweden exceeds 100 lbs. per person per year.

According to Lamborn and Co., Sugar Brokers in New York City, Canada's

consumption is 98.9 lbs. and is exceeded by Australia with 117.7 lbs., Cuba with 107.8 lbs. and Sweden 100.3 lbs.

Ethiopia and China have the smallest consumption, the per capita figure being 2.09 and 1.6 lbs. respectively per year.

In five years of **socialized medicine** in Britain 1,062,000,000 prescriptions have been dispensed, 28,000,000 pairs of glasses and 305,000 hearing aids have been handed out and ambulances have travelled 429,000,000 miles.

The national health scheme came into operation five years ago. The ministry of health today issued statistics marking the anniversary.

Doctors have had about 42,000,000 patients on their lists. Sixteen million patients have been discharged from hospitals and 156,000,000 visits have been made to out-patient departments. Fifty million cases have reported to casualty departments.

The dental service has supplied 10,500,000 dentures and has given 43,000,000 courses of treatment.

There now are 470,000 staffed beds in all hospitals, 35,000 more than in 1948.

GENERAL NEWS

ADA Membership Reaches All-Time High—Membership in the A.D.A. reached an all-time high of 78,304 on June 30th, 1953, a gain of 3,009 over the total for the corresponding date one year ago and 582 more than the previous total high established on Dec. 31st, 1952.

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There is one dentist for every 1,691 persons in the United States according to the American Dental Association.

The A.D.A. said in its 1953 Directory that there are 84,215 civilian dentists listed and an additional 17,423 serving in the armed forces and the Veterans Administration.

There are 4,762 more dentists listed in the new directory than in the 1950 edition. At that time the count indicated one dentist for every 1,733 residents.

The A.D.A. said that while the total number increase substantially, the proportion of dentists to the population decrease slightly in every region except the South-West.

•

Although women have about the same **Amount of Dental Disease** as men, women as a group have lost fewer teeth because they visit their dentists more often, The Journal of the American Dental Association has reported.

In a nation-wide survey of needs of dental patients, the Association's Bureau of Economic Research and Statistics found that half again as many males are in need of complete artificial dentures as are women.

The Bureau reported that one out of each ten adult males in the cross-section of dental patients had lost all of his teeth. For women, the figure was one out of each 15.

In the survey, more than 4,000 family dentists submitted reports on 39,679 patients.

Mr. B. Duane Moen, Bureau director, said that his study indicated that women are more conscientious about dental treatment than men. His figures showed that women were more apt to have missing teeth replaced by bridges and partial dentures than were men.

Tooth decay was found to be the principal reason for the loss of teeth up to the age of 39 for women and 34 for men. After these ages, periodontal diseases (ailments of the gums and other tooth-supporting tissues) were primarily

responsible for loss of teeth. Almost 50 per cent more men than women were found to be in need of extractions because of diseased gums, further indicating more dental neglect by males, Mr. Moen said.

Other facts uncovered by Mr. Moen in his survey were:

Teen-agers between the ages of 15 and 19 were most in need of dental fillings. Dental patients in this age group were found to have an average of five decayed teeth each.

About one-fourth of all boys and girls between the ages of 10 and 14 were in need of orthodontic (realignment of teeth) treatment.

One out of each ten adult dental patients needed immediate treatment for diseases of the gums.

Only about one dental patient out of each twelve examined had almost perfect dental health, requiring no dental treatment other than cleaning and scaling of the teeth.

•

Dental Caries Not a Primary Etiologic Factor in Malocclusion Study by Pelton and Elsasser Indicates. Dental Caries as a primary etiologic factor in malocclusion is not supported by the data obtained in a study by two dental scientists of the U.S. Public Health Service and reported in the June 1953 issue of **The Journal of the American Dental Association**. Drs. Walter J. Pelton and William A. Elsasser compared the grade school children in two cities in Idaho — Coeur d'Alene, whose water supply was fluoride-free (it is now fluoridated), and Nampa, whose water supply has a natural fluoride content of 1.5 ppm.

The purpose of the study was to investigate the prevalence of malocclusion in children and to measure the effect, if any, of dental caries prevalence on dentofacial deformities. The orthometer, a device for obtaining the dentofacial index (DFI) was used for the first time in an epidemiological study of the prevalence of malocclusion. Information revealed by an analysis of the data indicated that (1) while dental caries experience differed, the dentofacial index was essentially the same in both communities; (2) crowded arch and dental caries were unrelated; (3) at ages 6 to 9, the prevalence of cross-bite was slightly higher in the community with the higher dental caries experience, at ages 10 and 11, was considerably greater in the com-

munity with higher dental caries experience, but at age 13, ceased to be an important factor in malocclusion in either community; (4) when the percentages of children with both cross-bite and crowded arch were compared age by age for the two study groups, the differences closely approximated those ascertained when areas were compared on the percentages of children with cross-bite, also that 80 per cent of the children with cross-bite had crowded arch; (5) missing first permanent molars and second deciduous molars did not appear to influence the dentofacial index but did reflect the difference in dental caries experience between the two groups of children.

"Although the results of this study do not indicate that dental caries is unimportant in specific cases of malocclusion," the authors concluded, "the hypothesis which regards dental caries as a primary etiologic factor in malocclusion is not supported by the data obtained in this study."

Antibiotic Therapy: — William H. Dearing, M.D., and Fordyce R. Heilman, M.D., reported in the Proceedings of the Staff Meetings of the Mayo Clinic, March 11, 1953, that after administration of terramycin or aureomycin, the presence of resistant strains of micrococci in more or less pure culture in the intestinal tract may produce mild to extremely severe gastrointestinal and systemic symptoms. The substitution of erythromycin for terramycin or aureomycin produced prompt disappearance of the untoward symptoms and of the micrococci from the intestinal tract.

This research work is summarized as follows:

"Resistant strains of *Micrococcus pyogenes* (staphylococci) have developed in some of our hospitalized patients as a result of administration of aureomycin or terramycin.

"These resistant strains of micrococci, when present in the intestine in more or less pure culture, may produce varying degrees of gastrointestinal and systemic reactions. These reactions may be quite severe in some of the patients.

"Administration of erythromycin in doses of 300 to 400 mg. four times daily by mouth will eliminate these resistant strains of micrococci from the intestinal tract and alleviate promptly the untoward gastrointestinal or systemic reactions.

"Suggestive but not conclusive evi-

dence is presented to show that this micrococcic enterotoxic reaction is not related necessarily to pseudomembranous enterocolitis."

Educational Films

Continuing an activity which began with the production of the highly successful film, "It's Your Health" (over 600 copies of which are now in use), the Southern California State Dental Association announced this month the completion of its second in a series of dental health educational films for children.

Entitled "**Taro's Adventure in Health**," the new film is a unique, imaginative treatment of dental health, ideally suited by both theme and content for the 5-12 age group. It tells the story of Taro, a young Indian whose physical fitness, stamina and vitality enable him to meet every challenge in his struggle to win the honor of his tribe. Entertaining and exciting, the story becomes a testimony of the values of good living habits and the importance of safeguarding health. It serves also as a reminder that achieving and maintaining good health is basically an individual responsibility, particularly in the prevention of dental disease. Requests for preview, with intent to purchase, should be directed to the Southern California State Dental Association, 903 Crenshaw Boulevard, Los Angeles 19, California.

More than 14 Million Persons Drinking Fluoridated Water in United States, Council on Dental Health Survey Reveals—More than fourteen million persons in 43 states and the District of Columbia were drinking fluoridated water as of June 1, 1953, according to the annual survey completed on that date by the Council on Dental Health of the American Dental Association. The 14,144,856 persons reside in 764 U.S. communities.

Since the end of the survey period, seven new projects serving 121,495 residents of Idaho, Indiana, Iowa and Mississippi have been reported, increasing the total number of communities receiving fluoridated water to 771 comprising a total population of 14,266,351. With the 3,570,021 individuals previously determined by the U.S. Public Health Service as drinking water with a natural content of 0.7 to 2.0 parts per million of fluorine, the total number of persons receiving the optimum amount is 17,836,372, or better than 11 per cent of this country's 160,000,000 people live in areas served by 16,750 public water supplies.

Dr. H. Trendley Dean has been appointed Secretary of the Council of Dental Research of the American Dental Association, according to an announcement made by Dr. Harold Hillenbrand, A.D.A. Secretary. Dr. Dean was formerly director of The National Institute of Dental Research, United States Public Health Service.

Dental health for the first time is to be a part of the full-time program of the **World Health Organization**, beginning in 1955, under resolution adopted by the recent 6th World Health Assembly in Geneva. Adoption of the resolution was urged by the Federation Dentaire Internationale.

IN MEMORIAM

George Roy Ross, 72, retired Calgary dentist died on Sunday July 26th. Dr. Ross was born in Denver, Colo., and moved to Canada as a child with his parents. He lived in Winnipeg where he was educated at St. John's College and Manitoba College. He graduated in Pharmacy from the University of Cleveland, Ohio, and later received his degree in dentistry from North-Pacific College, Portland, Oregon.

In 1911 Dr. Ross moved to Didsbury, Alta., where he practised for three years until he moved to Calgary to establish a practice in 1918. He retired in 1949.

Surviving are his wife Effie, Calgary; 3 daughters—Mrs. J. A. Bridges, Los Angeles, Cal., Mrs. H. L. Thorne, Calgary and Mrs. R. S. Radcliffe, Ottawa.

Dr. Munthe was graduated from the University of Alberta in 1939, and moved to Prince Rupert 13 years ago. He was active in the Masonic Order and the Gyro Club.

He is survived by his wife.

J. L. Lundy died on April 7, 1953. He was born in Penticton, B.C., attended the North Pacific Dental College in Oregon, where he was an honour student and graduated in 1927. Dr. Lundy first practised in the Kootenays and served in the Dental Corps during the Second World War, after which he began practice in Oliver, B.C., where his death occurred. He is survived by his wife and one child.

Jens Munthe, prominent dentist and Norwegian Vice-Consul for the past eight years died suddenly in Prince Rupert, B.C., on July 27th. He was 52 years of age.

Born in Norway, Dr. Munthe only recently had made plans to practise in Terrace, B.C.

William D. Slacer, 90, died at Ridgetown on July 28th. He was born in Buffalo, N.Y., where he received his education. He graduated in dentistry from the University of Buffalo and practised in Buffalo until 1911. Later he lived at Font-hill, Ontario. He moved to Ridgetown in 1942.

DIRECTORY

Canadian Dental Association Headquarters—234 St. George Street, Toronto, Ontario.

Matters relating to the publication of manuscripts or news items for the English Section of the Journal should be addressed to the Editor-in-Chief, Dr. Wesley J. Dunn, 234 St. George Street, Toronto, Ont.

Matters relating to the French Section of the Journal should be addressed to the French Editor, Dr. G. de Montigny, 400 est Blvd. St. Joseph, Montreal, P.Q.

Matters relating to the business of the Journal should be addressed to the Business Manager, Dr. Don W. Gullett, 234 St. George Street, Toronto, Ontario.

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All additions and changes of address should be sent to Dr. Gullett before the 20th of the month, to become effective the following month.

Matters relating to advertising should be addressed to the Advertising Representative, Mr. W. Edgar Read, Consolidated Press, 73 Richmond Street W., Toronto, Ontario.

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La fluoration de l'eau au point de vue médical (1)

par le docteur AD. GROULX, M.P.H., directeur du Service de Santé de la ville de Montréal

Parmi les problèmes médicaux et dentaires, la *carie dentaire* est l'un de ceux pour qui il reste encore à trouver une solution. Il s'agit d'un problème qui affecte une très forte proportion de la population, surtout de la population infantine. C'est le défaut physique le plus fréquent avec le pourcentage le plus élevé, parmi les enfants d'âge préscolaire et scolaire. Une fraction seulement de ceux qui en souffrent sont traités; un grand nombre d'enfants, en particulier, demeure sans traitement. La limitation des fonds et du personnel du Service de santé rend difficile l'exécution d'un programme complet de prévention de la carie dentaire et de traitement des dents. On peut estimer qu'il en coûte actuellement à la population de Montréal une somme d'environ \$4,000,000.00 par année pour le traitement et l'entretien de ses dents, et cependant à peine le quart des besoins dentaires sont ainsi satisfaits.

La fluoration de l'eau de consommation constitue l'un des moyens les plus prometteurs mis à notre disposition pour prévenir la carie dentaire chez les jeunes enfants. Il vient s'ajouter aux préceptes de base: alimentation rationnelle des femmes enceintes et des bébés, enseignement des mesures prophylactiques telles le brossage et la propreté des dents et de la bouche, etc., traitements préventifs et autres qui conservent toute leur importance.

La fluoration de l'eau de consommation semble donc être la mesure sanitaire qui réduira l'incidence élevée de la carie dentaire chez la génération nouvelle qui naîtra après son application, et même chez les jeunes d'aujourd'hui à l'âge de la croissance et de l'évolution des dents temporaires et permanentes.

Emploi et expansion aux Etats-Unis

En mai 1945, on expérimenta la fluoration de l'eau dans la ville de Newburgh, N.Y., en ajoutant du fluorure de sodium à l'eau d'approvisionnement à une concentration de 1.2 p.p.m. Cette expérience a été complétée, cinq ans plus tard, par l'examen des dents permanentes de 2,700 enfants de 6 à 12 ans de résidence continue. Elle indiquait déjà une réduction de 42.4% de l'incidence de la carie dentaire.

Aux Etats-Unis, à la date du 6 février 1953, 598 municipalités dans 43 états ont adopté la fluoration et fluorent leurs approvisionnements d'eau de consommation pour réduire la carie dentaire. De ces municipalités, 14, y compris Baltimore, Buffalo, Washington (D.C.), Richmond (Va.), Miami, San Francisco, Pittsburgh, Indianapolis, Louisville, Providence ont plus de 100,000 de population. La population totale de ces 598 municipalités dépasse 10,000,000. Les villes de New York, Détroit, Cleveland, Philadelphie,

(1) Travail présenté devant les membres de la Société Dentaire de Montréal, à l'occasion d'une réunion tenue à l'aqueduc de Montréal, le mardi 21 avril 1953.

Milwaukee étudient cette mesure nouvelle de santé publique.

Au Canada, l'expérience en a été tentée à Brantford, Ont., et la mesure a été recommandée par le Service de santé de la ville de Toronto.

Les recherches épidémiologiques sur le fluor, qui remontent à quelque trentecinq ans, l'établissent comme un facteur inhibiteur de la carie dentaire. Elles laissent prévoir chez la nouvelle génération une diminution de la carie dentaire dans la proportion de 65%.

Le seul inconvénient au point de vue dentaire est la production de taches sur l'émail des dents (*fluorose dentaire*) mais ces taches ne deviennent perceptibles qu'à l'oeil exercé du dentiste, et cela à des concentrations de plus de 2.5 p.p.m.; aucun autre effet toxique n'a été rapporté dans les endroits où l'eau de consommation contient plusieurs fois la concentration de 1 p.p.m.

Définition

La fluoration consiste à ajouter un composé du fluor, surtout le fluorure de sodium ou le fluorosilicate de sodium, dans l'eau de consommation, dans la proportion d'environ une partie par million (1 p.p.m.) et à exercer un contrôle approprié du traitement par des méthodes approuvées. A ce dosage, aucun effet nocif n'a été constaté.

Relation avec la nutrition

Le fluor est un microconstituant de certains tissus du corps humain, en particulier des os et des dents.

Dans les régimes alimentaires, on ne l'avait pas considéré comme essentiel, parce qu'on n'avait pas reconnu sa fonction réelle dans les os, sauf aujourd'hui, dans les dents. Et là encore, c'est par ses effets toxiques nocifs, par ses accidents que, par déduction, on a pensé que des doses minimales auraient un effet avantageux. C'est ce qui a amené les chercheurs à considérer l'emploi du fluor dans certains aliments, dans l'eau en particulier, comme agent préventif de la carie dentaire. Son ingestion, en trop grande quantité, produirait de l'intoxica-

tion chronique et entraînerait des troubles cellulaires du métabolisme des os.

Le fluor est un sel minéral dont on retrouve des traces minimales dans la plupart des aliments, mais en plus forte proportion (quoique faible) dans le thé, les poissons et même dans le lait. C'est aussi un sel qui est contenu normalement dans l'eau, mais dans des quantités variant entre un taux assez élevé et zéro.

C'est un sel toxique en soi, un poison qui, employé en doses minimales incluses ou ajoutées à l'eau, dans une proportion de 1 p.p.m., a des avantages, en particulier, celui de prévenir la carie dentaire.

Sous des conditions de vie normale, le fluor est un élément de base dans l'alimentation de l'homme, dont l'eau potable est une source importante et variable.

L'intensité des mauvais effets du fluor sur les os et les tissus dentaires est en relation directe de la quantité de fluor qu'ils retiennent. Cependant, il y a une très bonne élimination du fluor chez l'homme par l'intermédiaire des urines, des selles et de la sueur.

Le fluor joue un certain rôle dans la composition normale des os. L'émail des dents est particulièrement riche en fluor; il en contient presque deux fois autant que les os. Tous les tissus contiennent du fluor qui, comme je l'ai indiqué plus haut, se trouve dans presque tous les aliments et la plupart des eaux minérales.

Le fluor qui est assimilé par les os et les dents n'est pas inconnu au métabolisme humain. Cependant, son action dans l'organisme est révélée par son influence toxique secondaire qui se manifeste par une fluorose de l'émail, plus communément appelée "mottled enamel," qui se produit surtout dans la denture permanente des enfants, lorsque le fluor est ingéré à des concentrations trop élevées.

On a aussi remarqué que des quantités appréciables de fluor sont retenues par l'enfant en croissance et que cela peut exercer une certaine influence sur son métabolisme. Mais les recherches faites à date démontrent bien que la quantité de fluor absorbée par l'organisme lorsque

l'eau consommée contient du fluor en concentrations de 1.0 p.p.m. ou moins est bien inférieure aux quantités qui produiraient des effets toxiques défavorables.

Toxicité du fluor

Il a été démontré que l'excès de fluor produit un empoisonnement aigu ou chronique. Dans l'empoisonnement chronique, le fluor s'accumule non seulement dans les os, mais aussi dans les tissus. Dans l'empoisonnement aigu, le calcium peut être diminué appréciablement. La quantité présente est proportionnelle à la quantité absorbée.

On a trouvé que le fluor en quantités de 0.03 pour cent ou plus du régime alimentaire retarde la croissance et détruit l'équilibre du calcium. Le phosphore est diminué dans la fluorose.

L'intoxication d'une nature plus générale par le fluor a aussi été décrite. Ses manifestations comprennent l'ostéosclérose de tout le système osseux, des dérangements gastro-intestinaux et des troubles cardiaques et respiratoires.

Il faut baser le choix du composé de fluor à employer pour traiter les approvisionnements d'eau sur l'efficacité prouvée de ce composé comme réducteur de la carie. D'autres produits ont été essayés, tels que l'acide hydrofluorique, l'acide hydrofluosilicique, le fluorure de calcium, le fluorure d'étain et le mono-fluorophosphate de sodium. Cependant, à l'heure actuelle, la preuve n'est pas suffisamment faite pour justifier l'usage d'un composé du fluor autre que le fluorure de sodium ou le fluorosilicate de sodium pour traiter un approvisionnement d'eau, si ce n'est sur une base expérimentale.

L'assertion voulant que la fluorose produise une hypertrophie de la glande thyroïde a été niée à la suite de recherches scientifiques faites par des autorités reconnues en la matière, sous le contrôle de la United States Public Health Service et le National Research Council (nov. 1951). Il a été prouvé que des populations entières en consomment leur vie durant, avec une concentration dans l'eau dans des proportions élevées jusqu'à 8

p.p.m. et une fluorose dentaire plus ou moins apparente.

En ce qui concerne la toxicologie du fluor en solution dans l'eau, les taches sur les dents se produisent quand la concentration de fluor atteint 2 à 5 p.p.m. mais ne se produisent pas quand l'eau en contient moins de 1.5 p.p.m. A la concentration de 1 p.p.m., il y a fluorose, mais non décoloration des dents.

Lansbury déclare: "L'absorption optimum de fluor est d'environ 1 milligramme par jour lorsque l'approvisionnement d'eau contient 0.9 p.p.m. La quantité de fluor suffisante pour causer la fluorose (dents tachetées) est de 1.7 ou plus p.p.m."

Des travailleurs exposés peuvent absorber jusqu'à 25 mg. par jour, ce qui résulte en un empoisonnement chronique au bout d'environ une année. L'empoisonnement chronique par le fluor est surtout caractérisé par les taches sur les dents, l'ostéosclérose et d'autres effets.

Il est généralement accepté que des symptômes toxiques apparaissent avec l'absorption d'une seule dose de 1/4 gramme à 1 gramme de fluorure de sodium, la dose toxique variant avec les conditions de l'individu au moment de l'absorption. Les symptômes comprennent des vomissements, des douleurs abdominales et de la diarrhée.

La dose fatale de fluorure de sodium semble être de 3 à 4 gr., dépendant également des conditions de l'individu au moment de l'absorption; mais Greene déclare que la dose fatale est entre 5 et 10 gr. Les symptômes d'une intoxication aiguë par le fluor comprennent les vomissements, les douleurs abdominales, la diarrhée, les spasmes douloureux, la parésie, la salivation excessive, la transpiration et la dyspnée. La mort est habituellement attribuable à la paralysie du système respiratoire.

Il est donc reconnu que de hautes concentrations de fluor peuvent causer la fluorose dentaire, mais à la concentration de 1 p.p.m., il y a fluorose mais non décoloration des dents; le dentiste seul peut le constater. Plusieurs dentistes con-

sidèrent même qu'à la concentration de 1 p.p.m., cette eau augmente la beauté des dents (33.34.) *L'avantage de la fluoruration c'est qu'elle peut être contrôlée au point qu'elle empêche la carie sans décolorer.*

Point de vue medical

Au point de vue médical, il n'y a pas d'objection à la fluoruration de l'eau, dans la proportion mentionnée, pourvu que cette opération se fasse sous une surveillance constante et rigide. Elle ne présente aucun autre problème de santé que celui déjà signalé de la décalcification de l'émail et cela, quand la concentration de fluor dépasse 1.5 p.p.m.

1o—Chez l'enfant et le jeune adulte:

Certains aspects du problème médical du fluor méritent toutefois d'être étudiés. Par exemple, *le problème de la rétention du fluor chez les jeunes enfants par opposition à sa rétention chez les adultes. La possibilité de certaines lésions squelettiques* qui résulteraient d'une ingestion d'eau potable fluorée a fait l'objet d'une étude récente et d'une enquête épidémiologique ayant porté sur l'incidence des fractures parmi les groupes d'écoliers et de jeunes adultes enrôlés dans les forces armées américaines.

Quant à l'opinion émise que *le fluor dans l'eau rendrait les os fragiles*, une étude détaillée de 1,458 enfants d'écoles supérieures dans 7 villes dont la concentration du fluor dans l'eau était variable, *n'a prouvé aucune expérience de fractures osseuses plus fréquentes.* Une enquête radiologique à Bartlett, Texas, où l'eau contient 8 p.p.m. de fluor révélait une densité osseuse plus prononcée dans 11% des cas examinés. Toutefois, *aucun trouble fonctionnel ne fut trouvé.* L'examen radiologique des personnes vivant dans des régions où l'eau, contenait de 1.2 à 3 p.p.m. de fluor, *ne permit pas de constater de la fluorose des os.*

Les résultats de cette enquête ont indiqué qu'il n'y a aucune relation entre les fractures et l'ingestion continue d'eau potable fluorée contenant jusqu'à 2, 4

ou même 5 p.p.m. de fluor. *Aucun effet de l'eau fluorée sur la taille et le poids des jeunes adultes et des écoliers ne fut noté.* Des jeunes adultes buvant de l'eau fluorée contenant de 2 à 5.2 p.p.m. de fluor ne manifestèrent aucun symptôme de lésion rénale. Aucun rapport n'a été publié d'effets désastreux autres que la fluorose dentaire dans aucune des régions ayant utilisé l'eau potable fluorée. Au contraire, des enquêtes pédiatriques, telles que celles conduites à Newburgh et Kingston, indiquent qu'il n'y a aucune différence notable entre les enfants de Newburgh et ceux de Kingston. Les études de McClure *sur la taille, le poids et l'incidence des fractures* chez les adolescents et les jeunes adultes de régions dépourvues de fluor et d'autres régions où l'eau contient du fluor *n'ont montré aucune espèce de différence.*

Les études sur la rétention fluorée dans des cas où des quantités considérables de fluor furent ingérées ont montré que *l'organisme possède un mécanisme très effectif d'élimination du fluor par l'urine, les selles et la sueur.* Il est par conséquent logique d'assumer que la fluoruration contrôlée de l'eau potable constitue une mesure de santé à l'abri de tout danger.

2o—Chez l'adulte:

Les fluorures ajoutées à l'eau ne causent pas de dommages aux organes internes des adultes. Les statistiques démographiques des régions où le fluor existe normalement dans l'eau ne montrent pas de corrélation entre le fluor et les taux de mortalité.

On a accusé les fluorures accumulés dans le système de provoquer un effet dangereux pour les reins. Là encore, les statistiques démographiques du "Wisconsin State Board of Health" ne relatent aucune différence dans les villes ayant des quantités variées de fluor dans leur eau potable. Son élimination par les urines, la transpiration et les selles, est à peu près complète. *L'habileté du système à manier les fluorures est adéquate à la quantité ingéré par l'eau fluorurée.*

A cause de la relation chimique que le fluor a avec le brôme et l'iode, on a

craint une augmentation des troubles cutanés comme l'acné. Une expérience du docteur Ervin Epstein, de l'Université Stanford de San Francisco, sur 40 patients souffrante d'acné, à qui il donna des tablettes de fluor, prouva que le fluor n'avait aucun mauvais effet.

On a aussi prétendu que la fluoration de l'eau des réservoirs public constituait une médication de la masse. La fluoration ne constitue pas un remède; il ne s'agit pas de traiter une maladie existante; il s'agit de la prévenir. La fluoration fournit une substance que l'on trouve normalement dans les dents. Cette substance, le fluor, apportée en quantités suffisantes, est un agent de prévention de la carie dentaire. D'autre part, nous avons dit antérieurement que le fluor est un constituant du corps humain et qu'on le trouve normalement dans des aliments, en particulier dans l'eau. Le fluor, comme la chaux et le phosphore, est un constituant naturel des dents et des os et doit être fourni au système par la nourriture et le breuvage afin d'établir une structure calcifiée normale.

Les fluorures dans l'eau potable des réservoirs publics ne sont pas plus une médication que sont les autres substances trouvées dans l'eau ou que les autres constituants nutritifs nécessaires pour le maintien de la santé. Ajouter du fluorure de soude à l'eau n'est pas plus une médication que d'ajouter du sel de table ou autres ingrédients à la nourriture pour la rendre agréable et utile.

Une grande objection portée a été que le fluor ou ses sels causeraient ou accéléreraient la croissance du cancer. Les faits suivants réfutent que le fluor cause le cancer:

Faits relatifs aux rumeurs que la fluoration cause le cancer:

	Denver (eau fluorée)	San Francisco (pas de fluor)
Taux du cancer par 100,000 pop.	518.2	525.9
Taux du cancer autre que la peau	396.9	446.2
Cancer du sein	85.0	91.1

Le "Texas Bureau of Vital Statistics" a démontré que dans les régions du pays avec une haute teneur de fluor dans l'eau,

le taux du cancer du sein est plus bas que dans les régions où il n'y a pratiquement pas de fluor dans l'eau.

Dans les cinq états de la Nouvelle Angleterre où c'est généralement connu qu'il n'y a pratiquement pas de fluor dans l'eau, le taux du cancer du sein est 17 fois plus haut par 100,000 de population qu'ailleurs.

Par ailleurs, au Texas où il y a plus de fluor dans l'eau que dans le reste du pays, le taux du cancer du sein est de 7.3. "The M.D. Anderson Cancer Research Hospital, at Houston Texas", établit que selon leurs records de milliers de cas de tumeurs dans le Texas, rien ne peut prouver que les régions avec eau fluorée montrent une plus grande incidence des tumeurs mammaires que dans les régions sans fluor.

Conclusion

Pendant des générations, trois millions de personnes aux Etats-Unis ont vécu normalement dans les régions où la concentration des fluorures est plus forte que celle recommandée pour prévenir la carie dentaire. La seule trouvaille faite par les chercheurs fut un défaut de l'émail, appelé fluorose dentaire dû à une trop haute concentration du fluor mais sans aucun mauvais effet physiologique.

Mesure approuvée

Tous les organismes de santé aux Etats-Unis ont préconisé les avantages et l'absence de tout danger de la fluoration. Je cite: American Medical Association; American Dental Association; American Association of Public Health Dentists; American Public Health Association; State and Territorial Health Officers' Association; United States Public Health Service; National Research Council; American Hospital Association; American Nurses' Association; American Water Works Association.

Le "Council on Pharmacy and Chemistry" et le "Council on Foods and Nutrition" de l'American Medical Association ont émis un communiqué conjoint au sujet de la fluoration des approvisionnements d'eau. Ces deux organismes

d'experts sont d'avis que l'addition d'une partie par million de fluor à l'eau potable est inoffensive, avec contrôle approprié par des méthodes approuvées.

La seule difficulté rencontrée jusqu'ici est un accroissement possible des taches sur les dents. Des milliers d'observations nous apprennent que la fréquence des taches sur les dents observées chez les enfants qui boivent de l'eau contenant du fluor jusqu'à une concentration de 1 p.p.m. est minime et que les taches ne peuvent être décelées que par un examen dentaire minutieux.

A part de l'effet sur l'émail des dents, aucun autre effet toxique n'a été rapporté dans les endroits où l'approvisionnement d'eau contient plusieurs fois cette concentration de 1 p.p.m. de fluor qui ne présente aucun danger.

Cependant, l'usage de produits qui sont naturellement riches en fluor, tels que les tablettes de poudre d'os, les losanges, les dentifrices, la gomme à mâcher à laquelle on a ajouté du fluor, devraient être évités là où l'eau est déjà fluorée. Dans les endroits où les enfants sont exposés à des températures chaudes et portés à boire beaucoup d'eau, il peut être nécessaire d'abaisser la concentration de fluor pour éviter les taches sur les dents.

Au Canada, ces mesures ont été approuvées par la Canadian Dental Association et la Canadian Public Health Association. A Montréal, la Ligue d'hygiène dentaire de la province de Québec; la Société médicale de Montréal et la Société dentaire de Montréal les ont aussi approuvées et recommandées.

Sans tenir compte de coût d'installation de l'appareillage et de l'équipement nécessaires, on estime que le coût annuel d'opération peut varier entre .08 à .12 par tête de population. Cet estimé peut varier d'un endroit à l'autre selon les conditions locales.

Il appartient au Service des travaux publics de la municipalité concernée d'étudier et de déterminer avec précision quel serait le coût d'installation et de maintien d'un système de fluoration.

Les deux produits recommandés et utilisés actuellement sont le *fluorure de sodium* et le *fluorosilicate de sodium*. L'utilisation de l'un ou l'autre de ces produits peut également faire varier quelque peu le coût de la fluoration.

De plus, il serait important pour le Service concerné de déterminer et d'appliquer les mesures de contrôle permettant de vérifier exactement la teneur de fluor dans l'eau de consommation comme cela se fait pour le chlore.

A Montréal, le Service de santé municipal a fait une étude complète de cette question et a soumis ses conclusions aux membres de deux sous-comités de la Commission municipale d'hygiène; les sous-comités d'hygiène dentaire et du génie sanitaire, qui en ont approuvé les conclusions. La Commission d'hygiène a aussi approuvé la recommandation du directeur du Service de santé à l'effet d'appliquer à Montréal la fluoration de l'eau de consommation dans la proportion de 1 p.p.m., comme mesure de santé publique et de prévention de la carie dentaire, à la condition spécifique que des mesures de contrôle soient prises.

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Influence des maladies générales sur l'os alvéolaire, d'après une étude radiographique ayant porté sur 300 sujets

Afin d'étudier l'influence des maladies générales sur l'os alvéolaire, les auteurs ont utilisé les radiographies buccales de 300 malades, de sexe masculin et d'âge variant entre 22 et 69 ans, en traitement au Veterans Administration Hospital, à Brooklyn, New-York. Pour 200 de ces malades, il s'agissait d'affections chroniques datant d'environ 6 ans en moyenne. Pour 100 autres, il s'agissait de troubles locaux d'une ancienneté moyenne inférieure à un an. Chacun des malades avait encore 8 dents au minimum.

Les renseignements ainsi recueillis permirent de dresser un tableau rattachant la hauteur de la crête alvéolaire à la longueur de la racine adjacente mésiale. On considérait la résorption alvéolaire comme légère, modérée ou grave suivant que la crête s'abaissait au niveau du premier quart de la racine, du second quart ou de la moitié apicale. Une majorité de résultats d'observations concernant les rapports crête-racine déterminait dans tous les cas la classification des radiographies étudiées dans l'une ou l'autre de ces trois catégories.

Cette étude conduisit aux remarques suivantes: 1. dans tous les cas, la résorption alvéolaire semble augmenter avec l'âge; 2. les maladies affectant le métabolisme général cellulaire paraissent accompagnées d'effets de résorption peu sérieux; 3. dans la plupart des séries de radiographies étudiées, l'importance de la résorption alvéolaire était la même pour la région antérieure et la région postérieure de la mâchoire, la résorption plus sévère affectant la région des molaires supérieures et des incisives inférieures. (S. Sigmund Stahl, Jacob-M. Wisan et Samuel-Charles Millier, Jour. Amer. Dent. Assoc., No 9, 1952, p. 277.)

Nouvelles de l'Association

Réunion annuelle de l'Association dentaire canadienne, à Montréal.

Le Bureau des Gouverneurs se réunira du 14 au 17 octobre et le Congrès aura lieu du 18 au 21.

Les réunions se tiendront à l'Hôtel Mont-Royal; on réserve ses chambres en écrivant au secrétaire du Comité du Congrès, le Dr D. B. Ward, 309 Drummond Medical Bldg., Montréal 25. Pour retenir des chambres, il faut en même temps s'inscrire pour le Congrès. Les frais d'inscription se chiffrent à \$15.00.

Réduction des taux de transport par avion pour le Congrès.

On vient de compléter les arrangements qui permettront à ceux qui viennent au Congrès par avion de voyager à taux réduits.

Voici les règlements à suivre pour bénéficier de ces tarifs spéciaux:

1) Il faut voyager par Air-Canada dans les limites du pays; être membre en règle de l'Association dentaire canadienne et se rendre au Congrès annuel, à Montréal. Les membres de sa famille (mineurs) peuvent aussi profiter de ces réductions à condition qu'ils voyagent tous ensemble et suivent le même trajet.

2) Les billets, aller ou retour, sont vendus à 90% du prix normal; les billets aller et retour, sont vendus à 160% du prix ordinaire d'un voyage aller ou retour.

3) On peut effectuer des arrêts en cour de route et les billets sont bons jusqu'à 4 mois après la date de l'achat.

4) Le voyage pour se rendre au Congrès, soit à l'aide d'un billet simple ou d'un billet aller et retour doit commencer au moins 15 jours avant le dernier jour du Congrès.

6) Les personnes, qui se procurent ces billets de faveur, doivent produire un certificat identificateur. On peut se procurer ces certificats en écrivant au Secrétaire, Association dentaire canadienne, 234 rue St-George, Toronto.

Le docteur H. J. Merkeley devient le premier président du Bureau National des Examineurs dentaires.

À la première réunion des représentants de cet organisme de l'A.D.C., tenue les 29 et 30 juin derniers, le Dr H. J. Merkeley, de Winnipeg, ancien président de l'A.D.C., a été élu président. Les autres officiers sont les suivants: vice-président, Dr William Miller, Vancouver; secrétaire, H. N. B. Beach, d'Ottawa; exécutif, Drs R. J. Godfrey, Toronto, A. G. Racey, Montréal, J. F. Edgecombe, St-Jean, N.-B. Le secrétariat du Bureau est situé à Ottawa. Toute la correspondance doit être adressée au Dr H. N. B. Beach, secrétaire, Bureau national des Examineurs dentaires, 150 rue Metcalfe, Ottawa, Ontario.

Le Bureau a reçu son existence légale du gouvernement fédéral en juin 1953. Depuis cette date, on a travaillé à mettre la dernière main à l'organisation du Bureau, qui présidera à ses premiers examens au printemps de 1954. Les candidats, qui passeront avec succès ces examens, recevront un parchemin qui sera reconnu par toutes les provinces canadiennes pour l'obtention d'une licence permettant d'exercer.

À cette dernière réunion, on a approuvé les statuts et les règlements du Bureau et nommé les examinateurs. On annoncera à l'automne les détails au sujet des examens et les endroits où ils auront lieu.

Endroits des prochaines réunions annuelles

À sa réunion de juin, l'Exécutif de l'A.D.C. a approuvé les endroits où se tiendront les congrès en 1955 et 1956.

En mai 1955 — à Toronto, en collaboration avec l'Ontario Dental Association.

En juin 1956 — à Banff, en collaboration avec l'Alberta Dental Association.

En 1954, la réunion se tiendra à St-André-sur-Mer, Nouveau-Brunswick, du

1er au 8 septembre, en collaboration avec la New Brunswick Dental Association. Cette année, la réunion a lieu à Montréal. Le Bureau des Gouverneurs du 14 au 17 octobre et le Congrès du 18 au 21 octobre, en collaboration avec le Montreal Dental Club.

L'Organisation mondiale de la Santé ajoute des activités dentaires à son programme

Grâce aux efforts de la Fédération Dentaire Internationale, l'Organisation Mondiale de la Santé a créé une subdivision dentaire et a admis le principe de nommer un consultant dentaire d'une façon permanente. A la sixième assemblée de cet organisme tenue à Genève du 5 au 23 mai, la Fédération était représentée par les docteurs A. E. Rowlett et G. H. Leatherman; la résolution suivante a été acceptée:

"Attendu que la quatrième assemblée de l'Organisation Mondiale de la Santé avait recommandé au directeur général d'étudier la possibilité d'établir un projet touchant la dentisterie;

"Attendu que le domaine dentaire a fait beaucoup de progrès depuis plusieurs années;

Il est recommandé que le directeur général inclue la dentisterie dans son programme général et qu'il prévoit dans son budget une part pour cette item, à la limite des possibilités pécuniaires;

2) Il est recommandé qu'on adresse à la Fédération Dentaire Internationale des remerciements pour sa collaboration soutenue.

De plus, le programme et le budget de l'Organisation Mondiale de la Santé prévoient l'élaboration de deux études qui ont des rapports directs avec la santé dentaire. L'une fera des recherches sur les relations entre la carie dentaire et la consommation de sucre; l'autre sur la prophylaxie de la carie dentaire par les fluorures.

Ces décisions signifient que l'Organisation Mondiale de la Santé reconnaît à sa pleine valeur l'importance de la santé dentaire.

Divers

—Le Dr L. D. Haselton, de Saskatoon, remplace le Dr John Clay, de Calgary, comme président de la Société Dentaire de l'Ouest de Canada; il fut élu au Congrès de Jasper du 14 au 18 juin; la prochaine réunion se tiendra à Régina, en 1955.

—Le Collège des Chirurgiens-Dentistes de la province de Québec a augmenté la cotisation annuelle de \$35.00 à \$75.00, par année.

—Le Conseil d'enseignement dentaire de l'A.D.C. annonce que l'équipe, qui visite les facultés dentaires canadiennes, poursuivra son enquête au cours de la prochaine année académique.

—Les universités de l'ouest ont convoqué une assemblée des représentants des ministères provinciaux de la Santé et de l'Instruction, du ministère fédéral de la Santé Nationale et du Bien-Etre Social et des associations dentaires provinciales. Le but de cette réunion est d'étudier les problèmes de l'enseignement dentaire dans l'ouest du Canada. L'Association dentaire canadienne a été invitée à y envoyer des représentants.

Nomination d'un nouveau rédacteur

A partir du 15 mai 1953, le Journal de l'Association Dentaire Canadienne a, comme rédacteur, le Dr Wesley J. Dunn.

Le Dr Dunn est un diplômé de la faculté dentaire de l'Université de Toronto et il exerce à Toronto depuis la fin de ses études, soit en 1947. Il s'est toujours intéressé aux organisations dentaires et au moment de sa nomination il faisait partie de plusieurs comités. Il s'est surtout occupé d'hygiène dentaire publique, de pédodontie et de littérature et, dans ces divers domaines, il a toujours fait preuve de beaucoup d'initiative. Il est entré en fonction avec la livraison de juillet du Journal.

Dorénavant, toute communication au sujet du Journal devra être adressée au:

Rédacteur

Journal de l'Association Dentaire Canadienne
234 rue St-Georges
Toronto.

Nouveaux délégués de l'Ontario au Bureau des Gouverneurs

A son assemblée annuelle tenue du 23 au 27 mai, le Bureau des Gouverneurs du Collège Royal des Chirurgiens-Dentistes de l'Ontario s'est nommé les délégués suivants au Bureau des Gouverneurs de l'A.D.C. pour un terme de deux ans: Dr C. M. Purcell, Pembroke; Dr P. G. Anderson, Toronto; Dr C. L. Strachan, London; Dr R. O. Winn, Kitchener.

Le Dr Purcell a déjà à son crédit quatre ans de service; les autres confrères sont des figures nouvelles au sein du Bureau des Gouverneurs.

Congrès de la Fédération Dentaire Internationale, en Italie, en 1957

Le comité d'organisation du douzième congrès international s'est réuni à Rome, le 19 mars dernier, pour commencer son travail. En accord avec le principe établi en 1900 au cours de la fondation de la F.D.I. de tenir une réunion tous les cinq ans, le comité a décidé de tenir ces assises à Rome, en 1957 (le dernier congrès eut lieu à Londres, l'été dernier.)

On a tenté de fixer les dates durant la période des vacances, c'est-à-dire entre la fin du mois d'août et le début de septembre. Le congrès aura lieu probablement dans les édifices E 42 qui communiquent avec le centre de la ville par un métro, qui doit être inauguré bientôt.

Le professeur Giovanni Corradi a été nommé secrétaire général du congrès. On a choisi les personnes suivantes pour diriger des différents comités qui s'occuperont de recevoir les 5,000 visiteurs, qui assisteront au Congrès, à différents titres.

Comité scientifique: président, le professeur De Vecchis; vice-président, le professeur Benagiano; Comité des finances: président, Dr Ricci; Comité de la presse, propagande, publicité, programme: président, N. L. Calarese; Comité des cliniques: professeur Marziani; Comité des exposants: président, professeur Bergamini; Comité du cinéma et de la télévision: président, Dr A. K. Ovdia; Comité des distractions et du tourisme: président, Dr Carli; Comité de

l'impression des délibérations: président, professeur U. Saraval.

On procédera bientôt à la formation d'un comité des dames.

Après la réunion annuelle de la F.D.I., qui a eut lieu à Oslo, du 26 juillet au 2 août 1953, la comité d'organisation commencera la publication d'un bulletin de renseignements, tous les six mois durant 1954-1955, tous les quatre mois durant 1956, et tous les mois durant 1957.

Les langues officielles du congrès seront l'anglais, le français, l'allemand, l'italien, l'espagnol.

Programme de santé nationale

Le 1er mai dernier, l'Honorable Paul Martin, ministre de la Santé nationale et du Bien-Etre social, a fait à la Chambre des Communes une déclaration importante au sujet de décisions récentes pour accentuer le programme de santé nationale. Il appuya sur les réalisations heureuses de ces cinq dernières années dans ce domaine; il rappella les paroles que prononçait l'ancien Premier Ministre en faisant part du plan de santé, à son début; celui-ci disait que les octrois fédéraux constituaient les prémices d'un plan intégral d'assurance-santé pour tout le Canada.

Le Gouvernement annonce qu'il met à la disposition des provinces des octrois pour la santé maternelle et infantile, pour la réhabilitation médicale et pour des services de radiologie. L'argent qu'on dépensera à ces fins représente des sommes substantielles. L'octroi pour la santé maternelle et infantile est donné pour procurer à toutes les mères canadiennes tous les soins sanitaires possibles, avant, pendant et après la naissance de leur enfant.

L'octroi de réhabilitation a pour but d'instituer ou d'améliorer les services de santé destinés aux citoyens rendus impotents. Ces fonds seront utilisés de trois façons:

- 1) entraîner un personnel pour ces réadaptations thérapeutiques;
- 2) fournir l'équipement nécessaire à ces services;
- 3) organiser et maintenir ces services de réadaptation.

Les octrois destinés aux services radiologiques permettront d'améliorer les moyens de déceler les maladies. Grâce à ces argents, on pourra établir, spécialement dans les centres éloignés qui ne disposent pas encore des facilités pour ce faire, et dans d'autres endroits des services modernes de diagnostic. L'octroi servira aussi à l'entraînement de radiologistes.

Grâce à ces octrois, ces différents domaines de santé recevront une impulsion appréciable.

Notes diverses

—Au cours du congrès annuel de la Société Dentaire de Montréal, qui eut lieu à Montréal, en mai dernier, le président de l'A.D.C., le Dr Gustave Ratté, a été nommé membre honoraire de cette organisation; le parchemin lui fut officiellement remis au cours d'un dîner organisé en son honneur.

—Le deuxième Congrès International Annuel aura lieu à Mexico, du 15 au 21 novembre 1953 et il est tenu sous les auspices de l'Association Dentaire Mexicaine.

Le Dr Harold K. Box, professeur de recherches en périodontie a reçu la médaille Fones de la Connecticut Dental Society, décernée chaque année, pour des travaux remarquables.

La Fédération Dentaire Internationale

Comment dirige-t-on les activités de la Fédération?

Le programme de la Fédération est dirigé par un personnel responsable au secrétariat-général. Des commissions, ou des comités sont nommés pour étudier un problème particulier; ces commissions présentent un rapport à l'assemblée générale annuelle. De plus, des travaux scientifiques présentés aux congrès internationaux complètent les activités de la Fédération.

Actuellement, la Fédération a des commissions permanentes dans les domaines suivants: enseignement dentaire, services dentaires de l'armée, hygiène buc-

cale ou dentaire, sciences dentaires, recherches et services dentaires publics. A l'occasion, d'autres comités sont appointés de temps à autre pour étudier un problème particulier.

Quel avenir attend la Fédération?

On ne peut le mesurer qu'à l'échelle du support que lui accorderont les associations nationales et les dentistes en particulier. Nulle part, l'hygiène dentaire est ce qu'elle devrait être et le niveau de la profession dentaire, surtout en ce qui a trait à son rendement, doit toujours être amélioré. De plus en plus, les pays du monde entier en viennent à considérer que la santé constitue un problème universel et que, seul les échanges scientifiques et la collaboration entre les nations pourront accomplir quelque chose qui vaille dans ce domaine. La Fédération Dentaire Internationale est l'instrument de choix de la profession dentaire pour que celle-ci puisse prendre part aux activités internationales. Si la profession dentaire veut avoir voix au chapitre dans le règlement des affaires du monde dans le domaine de la santé, il lui faut un organisme approprié et il faut que cet organisme soit bien vivant. La Fédération a été fondée dans ce but et n'a besoin pour prospérer que de l'appui moral et financier de ceux qui ont consacré leur vie à l'amélioration de la santé dentaire du monde entier.

(Les lignes qui précèdent ont été inspirées par un mémoire préparé par le Dr A. E. Rowlett, président honoraire et par le Dr Gerald Leatherman, secrétaire-général de la Fédération.)

(Le ton de ces renseignements s'apparente à celui d'un imprimé que l'Association Dentaire Américaine a fait parvenir à tous ses membres.)

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Cours de diagnostic et de chirurgie à la Faculté de chirurgie dentaire de l'Université de Montréal

Dans la semaine qui suivra le Congrès de l'Association dentaire canadienne, qui aura lieu à Montréal du 18 au 22 octobre, la Faculté de chirurgie dentaire offre aux praticiens un cours pratique de diagnostic, de chirurgie et d'anesthésie buccales.

A cette occasion, la Faculté a invité deux cliniciens de réputation internationale à donner des cours et des cliniques sur patients: les docteurs Edward V. Zegarelli de l'Université Columbia et Daniel S. Seldin de New York. Les dentistes qui suivront les activités du Congrès de l'A.D.C. pourront prolonger leur séjour à Montréal et bénéficier des mêmes dépenses de voyage.

Dates du cours: du 26 au 31 octobre 1953

Frais d'inscription: \$75.00

Nombre maximum d'inscriptions: 20

Pour tout renseignement, on s'adresse au docteur Ernest Charron, doyen, Faculté de chirurgie, Université de Montréal, casier postal 6128, Montréal.

L'île des dents absentes

"Vous faites la connaissance d'une jolie fille de Terre-Neuve, dit un touriste, et elle vous plaît jusqu'à ce qu'elle entr'ouvre la bouche. A partir de ce moment, elle a l'air grand-mère."

Tous ceux qui se rendent à Terre-Neuve restent stupéfaits de l'état des dents de ses habitants: à l'âge adulte, presque tous portent des prothèses complètes ou sont édentés. Les enfants souffrent de carie dentaire à un degré pitoyable. Le sous-ministre de la Santé de la province, le Dr Leonard Miller, déclare: "A Terre-Neuve, la santé dentaire est pire que partout ailleurs."

Les spécialistes attribuent cet état de choses à la consommation considérable de poisson et à la carence de fruits, de légumes frais et de lait. De plus, la population de Terre-Neuve n'a aucun souci de sa denture.

"Les gens de Terre-Neuve, quand il s'agit de leurs dents, adoptent une attitude fataliste," dit un porte-parole du Ministère de Santé fédéral. "Ils en jouissent, quand ils les ont, et s'en moquent, quand ils les ont perdues."

Terre-Neuve manque de dentistes; elle n'en a que 22 (1 par 16,000 de population). A St-Jean, capitale de la province, il faut parfois attendre un mois avant d'avoir un rendez-vous chez le dentiste.

Au début de juin, ce petit nombre de dentistes a fait l'objet de discussions animées. Une femme-dentiste, le Dr Rota Snikeris, une émigrée de Latvie, s'était adressée au Collège des Dentistes de Terre-Neuve pour obtenir une licence. Le Collège refusa sa demande sous le prétexte que sa formation professionnelle, reçue en Europe, n'était pas à la hauteur des standards nord-américains. Le gouvernement prit la cause du Dr Snikeris en mains et le procureur-général, Leslie Curtis, accusa les dentistes de se conduire à la façon d'une union ouvrière mettant en force l'atelier fermé.

Le Gouvernement renversa la décision du Collège, permit au Dr Snikeris d'exercer sa profession et invita tous les dentistes européens, qui le désirent, à aller pratiquer à Terre-Neuve.

Dernier appel

**Congrès de l'Association Dentaire Canadienne
à l'Hotel Mont-Royal de Montréal
du 18 au 21 octobre 1953**



Le parc Lafontaine, à Montréal, l'un des plus beaux d'Amérique

activités scientifiques

- cliniques
- conférences
- cliniques de table
- cliniques au fauteuil
- films

activités universitaires

- célébration du cinquantième anniversaire de la fondation de la Faculté de chirurgie dentaire de l'Université de Montréal.

activités sociales

- diners
- banquet
- cocktails
- danse
- programme pour les dames
- conventums

Pour retenir ses chambres et s'inscrire au Congrès, on s'adresse au Dr. D. B. Ward, 309 Drummond Medical Bldg., Montréal—Prix de l'inscription: \$15.00.



PLACE D'ARMES, Montreal, with one of the twin steeples of Notre Dame Cathedral in the background. In the foreground, a "coureur des bois," one of several bronze figures adjoining the statue to Maisonneuve, founder of Montreal (1642).

JOINT MEETING
**THE ANNUAL MONTREAL FALL CLINIC
THE CANADIAN DENTAL ASSOCIATION**

Under the Auspices of
THE COLLEGE OF DENTAL SURGEONS, P.Q.
OCTOBER 18, 19, 20, 21, 1953

THIS CONVENTION MERITS YOUR SUPPORT



Photograph—
James B. Hardy

EDWARD R. W. BILKEY, D.D.S., TORONTO.
President, Canadian Society of
Dentistry for Children.

The Journal

OF THE CANADIAN DENTAL ASSOCIATION

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No. 10

Autocuring Resins in Operative Dentistry

by JAMES R. JENSEN, B.A., D.D.S., M.S.D.,* and
ROBERT E. SAUSEN, D.D.S., M.S.D.**

THE dental profession is constantly searching for the ideal filling material that will match the physical properties of enamel and be aesthetically acceptable to the patient. The scarcity of metallic filling materials in Germany during the last war provoked research on an old industrial product, methyl methacrylate, and produced material new to restorative dentistry, the rapid curing resin. Acrylic resins were discovered a century ago, but were not introduced in dentistry until 1938 as a denture base material. It was this methyl methacrylate that German scientists succeeded in adapting to clinical restorative procedures. Through the addition of a catalyst, (benzoyl peroxide), and activator (a tertiary amine), and cross linking agents, they were able to reduce the setting time of the material sufficiently to make direct restorative procedures practicable.

This new material became available to the profession in 1948. At that time, the profession was led to believe that the ideal filling material was here. It was only necessary to cut a cavity with undercuts, force in a mix of resin of a selected shade, hold for a specified time under a matrix, trim the excess at the margins, and finish the

restoration with discs and pumice. The profession eagerly accepted this material on the manufacturer's recommendation only to be quickly disillusioned by clinical results. It appeared that the material was not consistently acceptable. Some restorations stayed in, some fell out, many discoloured at the margins, and some rocked loosely in the cavities. Pulpal irritations were produced where very small cavities were filled with the material. The closets of dental offices soon found acrylic kits gathering dust on the back shelves.

Since its introduction, dental researchers have been examining this new material. As a result, today we are much better equipped to evaluate the autotset resins, and to define what place they may have in restorative dentistry. In order to judge an acceptable filling material, the physical properties of the substance must be delineated. The polymer, whether made by the extrusion method or the pearl polymerization process, is composed of small particles of polymerized methyl methacrylate. The monomer is the unpolymerized methyl methacrylate. When allowed to polymerize, the monomer exhibits a setting shrinkage of approximately 21%. When the monomer and polymer

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are mixed, the resulting polymerized material shows a 5.7% volumetric shrinkage or a 2.3% linear shrinkage on setting.¹

It had been assumed that the resin would act as a liquid in a closed system and that constant pressure with a matrix would compensate for this setting shrinkage. This proved untrue. Matrix pressure was constant only while the matrix was actively in motion. When the band came to rest against the cavo-surface margins of the tooth, the system became static and no further pressure was exerted against the filling material. As a result the mass shrinkage remained uncontrolled. Thus, the filling may draw away from the pulpal wall leaving the margins tight, or from any or all of the mar-

gins, producing a leaky filling. Unfortunately, the site of shrinkage was not controllable by the operator, and marginal seal was too inconsistent. This accounted for much of the initial disappointment with the material.

In 1950, Dr. Frank Nealon introduced the brush-in technique of applying the resin to the cavity without the use of compression devices. Using a sable brush, the material was placed in the cavity in small increments of polymer wetted with monomer. Each increment was allowed to polymerize initially before the next bead was added. In this way, the setting shrinkage of each bead of resin was compensated for by the following bead. Thus, the more applications of resin it took to fill a cavity, the more com-

TEMPERATURE CHANGES DURING POLYMERIZATION

OF AUTOCURING RESINS USING ONE APPLICATION OF POWDER AND LIQUID

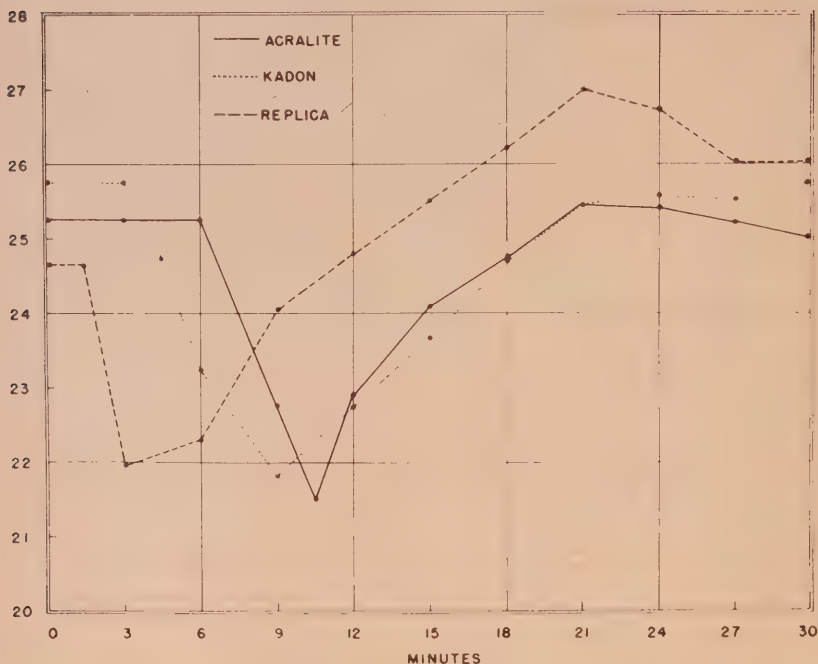


Figure 1.

pensation was obtained for the setting shrinkage. Dr. Nealon established a minimum of eight additions of wetted polymer for an ordinary one-surfaced cavity². The aetiology of pulpal irritation in small cavities filled with the rapid curing resins was soon evident, even with the non-compression technique. When the cavity was so small that it required only a few beads to fill, the mass setting shrinkage was not being compensated for. The shrinkage was far in excess of a tolerable minimum, and the restoration was smaller than the cavity. The material *per se* did not irritate the pulp. The same pulpal reaction could be produced by preparing a cavity and leaving it unfilled, exposed to the oral environment.

TEMPERATURE CHANGES DURING POLYMERIZATION

The graphs shown in Figures 1 and 2 describe the characteristics of temperature changes that occur within the

mass of polymerizing acrylic. There is an initial cooling below the ambient temperature because of volatilization of excess monomer at the surface. Low points on the curve mark transient equilibrium points where the heat loss of evaporation is equalled by the steadily increasing heat of reaction in the underlying mass. This production of heat is best suited to the brush-in technique if it transpires very quickly, being directly related to the speed of polymerization. In Figure 2, beads of acrylic were applied at intervals of 15 seconds to a thermocouple for the first three minutes. It can be seen that a peak temperature is obtained from fifteen to twenty minutes later, depending on which brand was used. A maximum of 2°C above the initial temperature was not exceeded. It is not expected that the more prolonged build-up of larger restoration would boost this temperature rise. The actual temperature of surrounding dentine in a cavity would not be increased as much

TEMPERATURE CHANGES DURING POLYMERIZATION

OF AUTOCURING RESINS USING THE BRUSH-ON TECHNIC

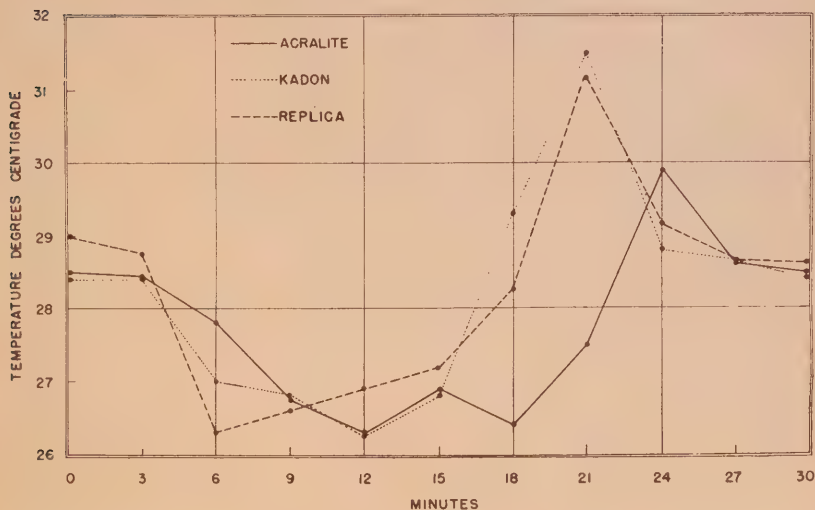


Figure 2.

as the acrylic, due to loss of calories at the free surface of the restoration. A brush-in acrylic filling cannot produce a thermal shock to pulp tissue, either during polymerization or later.

HARDNESS AND STRENGTH

Table 1 demonstrates that the low hardness common to most polymerizing plastics can be improved by an average of 66% if the specimen is constructed with the brush-in technique. Unfortunately, we cannot take advantage of this improvement in a practical sense, since the improved hardness and strength are equal to only one-fourth of the same properties for silver amalgam restorations. This remains insufficient to maintain contour or marginal rigidity under the usual stresses of mastication. Perhaps this added strength may be of some usefulness when considering resistance to displacement in the retention forms, but this would only be effective in relatively large size retentions. Acrylic definitely flows if a sustained stress is ap-

plied, and, if this stress is very high, there may be an initial warping of the entire mass. Thus, it is seen that acrylic must be contra-indicated in occlusal or incisal restorations. Its limitation to the labial or buccal surfaces or to the proximal surfaces of anterior teeth is consistent with the only real need for this material — aesthetics. These surfaces are not only free from stress but they experience the smallest range of temperature variations, which minimizes the importance of a high coefficient of thermal expansion in acrylic.

COLOUR

The perfection of harmonizing colour to tooth structure is, first of all, accountable to the skill of the manufacturer in the development and distribution of organic pigments into his polymer product. This is a difficult process. The incorporation of coloured compounds into a molecular bond with methyl methacrylate is one way of improving both uniformity and stab-

KNOOP HARDNESS NUMBERS OF AUTOCURING RESINS

	KADON	REPLICA	ACRALITE
Pressure Packing Technic 500 gram weight	7.7 ± .2	9.6 ± .1	10.9 ± .4
Non Compression Technic (Brush-on)	15.5 ± .2	14.1 ± 1.1	15.6 ± .5

DATA COLLECTED BY MISS JEANNE HANNON, DENTAL MATERIALS LABORATORY
UNIVERSITY OF MINNESOTA, SCHOOL OF DENTISTRY.

Table 1.

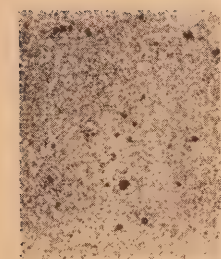
ility of acrylic colour. Such an improvement is possible. The operating dentist is dependent upon the quality of the colours available and upon the integrity of the provided shade guides. Under all circumstances the latter must be of acrylic, and best accuracy is obtained if each operator will construct his own tabs with the same technique used to apply acrylic in the mouth. A greater variety of blends can be made in this way. A comparison with tooth structure under a plain, white, reflected light gives a more precise evaluation. Once a shade is selected, this decision should not be changed by the appearance of a partially filled cavity. The apparent colour of acrylic before and after polymerization is not identical. Only the hardened, polished surface of the finished acrylic can be expected to match the original colour selection.

In time, a loose acrylic filling will take on a dark yellow appearance, largely due to the admittance of stained debris along the walls of the cavity. Very little, if any, extraneous pigments will pass into the substance of the

acrylic unless a large number of air voids have been trapped in the setting material, rendering it porous. These voids in acrylic cannot be completely eliminated. Photo-micrographs demonstrate the appearance of many voids which could not be seen with the eye alone (Figure 3). Several factors may have created them. Air inclusions usually account for the larger ones. Bubbles may also be attributed to incorrect ratios of catalyst and inhibitor, volatilization of free monomer during polymerization, and localized shrinkage spots. Regardless of the source, observations have shown less of these to result in specimens made with the brush-in technique than with the compression methods of molding acrylic. Consequently, a brushed-in acrylic is more dense and homogeneous. Table 2 illustrates this difference. More light is transmitted through the compressed specimen because of its porosity, and this same factor scatters the incident rays of light sufficiently so that less light is reflected back. If it were possible to obtain the same powder-liquid ratios in both methods, then the brush-

PHOTOMICROGRAPHS OF AUTOCURING RESINS USING THE BRUSH-ON TECHNIC

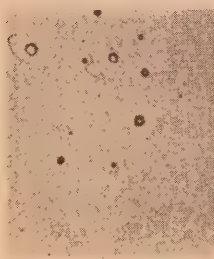
17 X MAGNIFICATION



ACRALITE

15.6±5

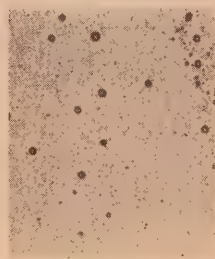
KNOOP HARDNESS



KADON

15.5±2

KNOOP HARDNESS



REPLICA

14.1±1.1

KNOOP HARDNESS

PHOTOGRAPHIC LABORATORY, SCHOOL OF DENTISTRY, UNIVERSITY OF MINNESOTA

Figure 3.

in acrylic would appear more opaque. In any case, it would certainly reflect a truer and more vivid colour value

to the observer's eye. This makes colour selections more reliable with the brush-in technique.

LIGHT TRANSMISSION OF AUTOCURING RESINS

	Non Compression Technic (Meter Candles)	Compression Technic* (Meter Candles)
FASTCROWN	70	85
KADON	65	85
REPLICA	50	55

LIGHT REFLECTION OF AUTOCURING RESINS

	Non Compression Technic (Meter Candles)	Compression Technic* (Meter Candles)
FASTCROWN	19	16
KADON	19	15
REPLICA	18	16

*500 gram weight

PHOTOGRAPHIC LABORATORY
SCHOOL OF DENTISTRY, UNIV. OF MINN.

Table 2.

A brief review of these properties with a comparison of the two techniques is summarized in Table 3. The consistent superiority of the brush-in technique is obvious, and largely accounts for the continued use of acrylic in operative dentistry. Consequently, we may consider only this improved method (Nealon's) in the descriptions below. The limited usefulness of acrylic throughout restorative work can be explained best by a listing of those situations in which it has been used successfully.

TABLE 3

	Compression	Brush-in
1. Hardness (average Knoop, 500GM weight)	9.4	15.1
2. Transfer of light	Impaired by voids	Uniform
A. Transmitted Light	More	Less
B. Reflected Light	Less	More
3. Linear shrinkage of polymerization	2-3%	Fully compensated
4. Marginal Adaptation	Poor	Excellent
5. Generation of heat	Varies with size of filling	Maximum rise of 2°C.

FACTORS GOVERNING CLINICAL USE

- I. Indications:
1. Primarily Class III and V anterior cavities—as a substitute for gold foil.
 2. Anterior Class IV cavities, and posterior Class I and V cavities in selected cases.
 3. Labial windows on three-quarter crowns.
 4. Full facings on open-faced crowns.
- II. Contra-indications:
1. Areas subject to occlusal or incisal stresses.
 2. Small cavities (which will not contain 8-10 beads).
 3. When the rubber dam cannot be applied, or the area cannot be kept dry until surface polymerization is complete.

CAVITY PREPARATION

The design of the cavity should be developed with three fundamental features in mind. First, the margins are extended out to self-cleansing areas in all directions. Acrylic is usually impermeable to bacteria, yet it has no inhibition to the growth of bacteria on or near the surface. The recurrence of caries at margins must always be anticipated. Also, the restoration must be extended sufficiently to allow adequate access for finishing the margins. The colour and translucency of this material displays any marginal discolouration easily. Experience has shown that an overhang or underhang predisposes to accumulation of yellow or light brown stains at these points. The effect of an overhang is simulated by a bevelled margin, even though the margin may have been finished. A ninety degree butt seam, considered the ideal margin for amalgam, is also ideal for acrylic if the appearance of its outline is to remain obscure. All preparations, therefore, are box-shaped with lateral walls projecting to the surface with a ninety degree cavo-surface angle. No undermined enamel rods should remain.

If a conventional Class III cavity is

to be cut on an upper anterior tooth, the margins would be extended as follows: Incisally—to restore the contact point without jeopardizing the strength of the incisal angle; Gingivally—to be placed below the gingival papilla; Lingually—to extend to the marginal ridge or to an area that can be reached with a finishing instrument; Labially—to the labial-proximal-axial line angle of the tooth (Figs. 4, 5, 6). It should be seen that these criteria are closely similar to the corresponding extensions of a Class III gold foil. This is in accord with the intention of treating this material as a durable and permanent restoration.

The second fundamental is the matter of retention forms. Acrylic possesses no natural adhesiveness to the tooth structure on which it polymerizes. Some demonstrators have shown acrylic fillings to be securely retained in inlay type cavities with no undercuts. This is not adhesiveness, and to rely on such evidence will be disappointing. It is rather evidence of the very close adaptation to cavity walls given by the brush-in application and of the frictional resistance thereby obtained. Radioactive tracer studies have shown the peripheral seal of all dental

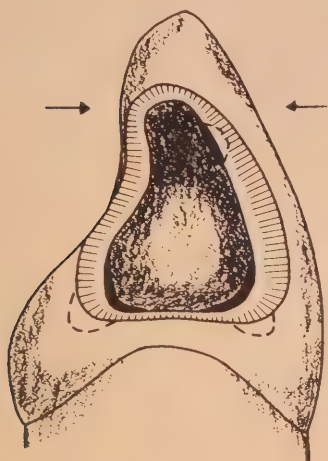


Fig. 4.

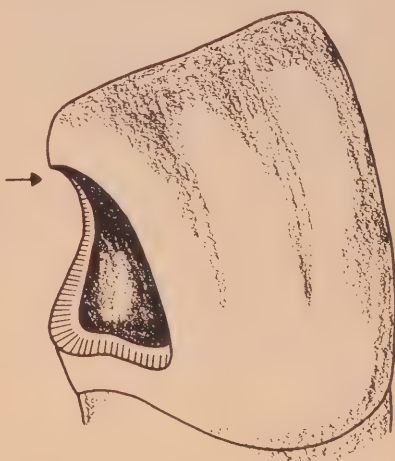


Fig. 5.

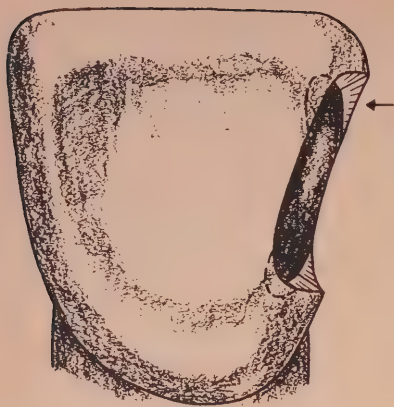


Fig. 6.

filling materials, including acrylic, to be penetrated by ions in less than one day.³ If aqueous solutions can diffuse around fillings so easily, adhesion cannot be a characteristic of their retention. Definite mechanical retention forms are important. These are most accurately placed with a very small round bur which also gives the correct shape — a rounded projection into the dentine. These undercuts must be bulky enough for strength and wide enough to avoid trapping air bubbles.

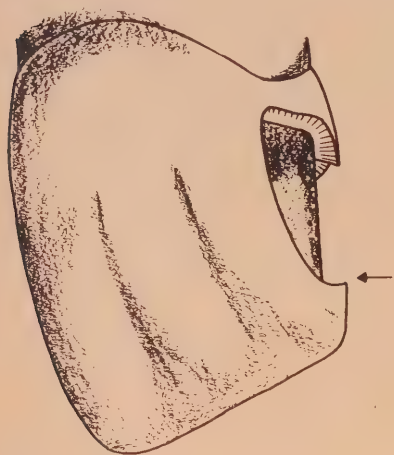


Fig. 7.

as the acrylic is placed in them. Retention is particularly critical for Class III restorations where contour and contact point are built out. Here a longer axis of rotation is in force when finishing strips are drawn across the acrylic surface. The act of finishing and polishing the acrylic restoration may place more stress on it than any subsequent period of its lifetime. A morticed shaped cavity with definite line-angles between retention forms will insure more stability at all times. Figures 7, 8, and 9 demonstrate the salient points of a proximal preparation with a lingual dovetail on an anterior tooth. Figure 10 illustrates the simple Class V cavity preparation. A compound cavity preparation combining Class III and Class V presented in Figures 11 and 12.

The application of all points mentioned above may have provided for the third basic feature of an acrylic cavity already, namely, adequate volumetric bulk. The main purpose of the brush-in method, to compensate for the setting shrinkage of each applied bead, cannot be satisfied until a minimum of eight to ten beads have been positioned. Accordingly, if the cavity form will not hold such a volume, it should be enlarged, or filled with a different filling

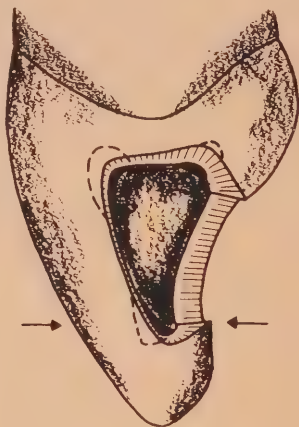


Fig. 8.

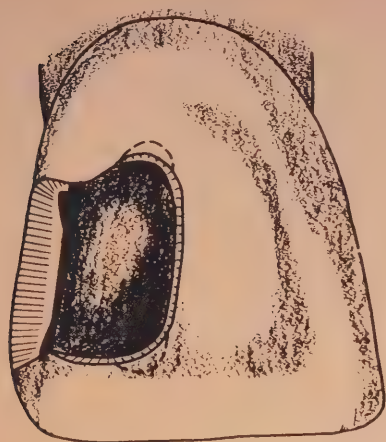


Fig. 9.

material. Under most circumstances this enlargement must proceed laterally rather than pulpally. An oxyphosphate zinc cement base is called for, if a deep cavity already exists. Varnish cavity liners are useless since they are disintegrated by acrylic monomer, and a eugenol preparation will prevent any contacting acrylic from polymerizing. This latter effect is given by phenol or any type of oil because they will diffuse into the acrylic mass and mechanically

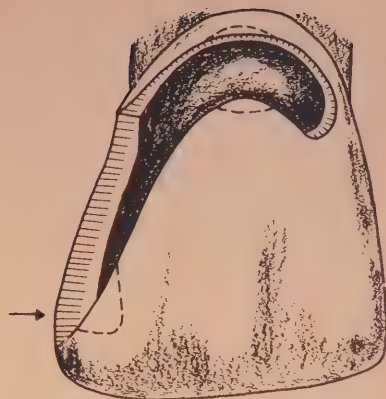


Fig. 11.

obstruct the setting reaction. Even though a eugenol pulp capping has been covered with a zinc base, enough oil may diffuse through the cement to jeopardize one or more retentions of the acrylic.

PAINING ACRYLIC BEADS

The development of an ideal bead of acrylic requires some practice by the operator before the correct size and consistency is obtained. Each stock of



Fig. 10.

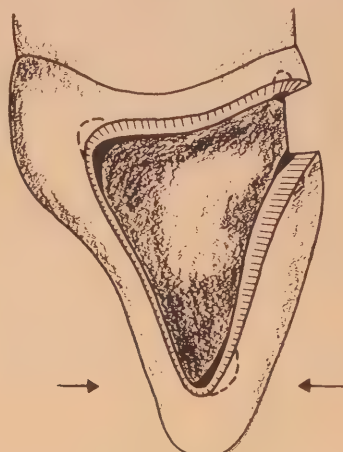


Fig. 12.

acrylic may vary somewhat in the viscosity of its monomer and the ease with which the powder is wetted. Low viscosity monomers are essential for a good bead, and those powders which are wetted by the least amount of liquid are best. In other words, each bead should contain a maximum of powder for the amount of liquid on the brush. This will yield the smallest amount of net shrinkage as the bead polymerizes. A dry bead, though, is unacceptable because it will not flow onto the cavity walls and will leave a weak, porous filling. Each bead should present a glistening, thoroughly wetted surface. Some monomers will evaporate so rapidly that the acrylic surface may appear dry and pebbly before the next bead can be applied. This should be avoided by the addition of extra monomer if necessary, keeping the surface of the restoration moist throughout its construction. This does not imply flooding the cavity with monomer. Most polymers on the market today consist of translucent methyl methacrylate particles dusted with a pigment—a dry emulsion. Excess monomer flooding the cavity tends to leach out the pigments producing a translucent filling. Humidity and temperature of the atmosphere affect the rate of monomer evaporation considerably. This makes it difficult to time the frequency of bead applications by observing their surface. At least fifteen seconds should pass between beads. The next bead may be applied after the fifteen second period, as soon as the surface gloss disappears from the previous bead. These intervals of waiting are highly important, allowing each bead to accomplish much of its setting shrinkage before the next is added.

Large cavities involving several surfaces may need as many as forty or fifty beads. Since only two or three are applied each minute, one may spend fifteen minutes in simply filling the cavity. When the cavity is filled, excess

acrylic should be painted over the margins, and the entire surface should be overcontoured. The last layer of acrylic will become porous from surface evaporation of monomer, and this must be polished off later to expose the well polymerized acrylic below.

The restoration should not be disturbed for at least 20 minutes following the application of the last bead. After the waiting period, the gross excesses at the margins may be trimmed with a sharp #11 Bard-Parker blade. Finishing of the restoration is done at the second sitting using garnet discs, garnet or lightning strips, and a rubber cup with a polishing abrasive. Care must be taken not to overheat the surface of the restoration during finishing procedures.

SUMMARY AND CONCLUSIONS

1. The compression method of inserting autotset resin fillings does not compensate for the polymerization shrinkage and therefore cannot produce consistently acceptable results.

2. Pulpal irritations from the material *per se* have not been demonstrated.

3. Using the brush-in technique the heat of polymerization is not sufficient to cause pulpal damage.

4. Colour accuracy has been improved with the brush-in technique.

5. The brush-in technique has increased the hardness and strength of the polymerized mass by an average of 66% over the compression method. Even with this improvement, the acrylic still has only one-fourth the hardness and strength of the silver amalgam. It is, therefore, not recommended for restoring areas subject to occlusal or incisal stress.

6. Most unfavorable results occurring with the use of the rapid setting acrylics, stem from the operators inability to handle the material properly, or his not taking due regard for the physical properties of the material, or perhaps

the most frequent error, mistakes in diagnosis. This material, as we have it today, is not the universal filling material. It cannot be handled with the freedom of the silicate cements. Its indications have been stated, and recommended cavity preparations described.

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Data collected for Figures 1, 2, and 3 and Tables 1 and 2 by Mrs. Jeanne H. Larson, School of Dentistry, University of Minnesota.

The Control Of Haemorrhage In Haemophilia And The Major Blood Dyscrasias During Exodontia

by JOHN A. FOLKINS, D.D.S., L.D.S.,* Vancouver, British Columbia.

IN a previous article† attention was drawn to the composition of the blood, blood function, the physiology of normal blood clotting and some of the common causes of failure in clotting. Treatments were prescribed for haemorrhages, both traumatic and infective secondary, but only brief mention was made of haemorrhage arising from systemic disease, or from quantitative and qualitative deficiencies which necessitate transfusion as part of treatment and control. Mention was made of haemorrhage arising from a slightly abnormal clotting and bleeding time as evidenced in the minor blood dyscrasias.

When we consider the major dyscrasias—those quantitative and qualitative blood deficiencies which come under this heading — more emphasis must be placed on the blood chemistry and haematology and its variation from the normal. The means of bringing these conditions to closer approximation of normal is the underlying factor which will determine our success in controlling the bleeding. Without just attention to these haematological factors associated with any major dys-

crasia, we will be inviting unnecessary trouble for ourselves and hardship for the patient.

Trauma is the most frequent cause of haemorrhage. Only in rare instances is haemorrhage due to a defect in the blood content or to fragility of the vascular walls. Nevertheless the dentist must have the knowledge to recognize and to control any severe postsurgical haemorrhage in a patient suffering from one of these deficiencies.

Too much emphasis cannot be placed on a good case history and any statement volunteered by a patient suggesting that he is a bleeder must not be underestimated. Calm questioning will help us to differentiate between the psychological bleeder and the bleeder whose fears are based on fact. If a careful case history discloses several major or minor operations in the life of the patient with no history of haemorrhage at the time of surgery, we may feel fairly confident that although the patient professes a fear of bleeding, no major dyscrasia is present. For a purely psychological effect it would be advisable to refer the patient

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†Folkins, J. A.: "I am a Bleeder, Doctor"—J. Can. Dental Ass. 18: 250 (May) 1952.

to a medical laboratory for the usual tests for bleeding and clotting time which in most instances will be found to approximate the normal.

Conversely, if a history reveals a series of surgical experiences where postoperative bleeding was a major factor, then we must immediately be on our guard. Fortunately, any history of postoperative haemorrhage will in itself prompt patients to advise us of that fact or else they have been advised by their physicians to mention it whenever any surgery is contemplated, minor though it may be.

LEE WHITE METHOD

With a history of postoperative haemorrhage we should suspect a marked variation from the normal clotting time, in which case a more accurate method for determination is advisable. This is where the Lee White method, as compared to the usual capillary tube method, becomes of inestimable value. In this method venous blood is used. A clean syringe is rinsed in a salt solution and enough of the solution retained to fill the space between plunger and barrel. Blood is withdrawn quickly from a vein and 1 cc. emptied into each of three test tubes 8 mm. in diameter. The tubes are rotated endwise every 30 seconds until the blood maintains its shape when the tube is inverted. This is the coagulation time. Normal with this method is 5-8 minutes. Accurate clotting time is most important. It will warn us of the severity of any dyscrasia present and permit us to plan a method of control.

CLOT CONTRACTION METHOD

This is a simple test which gives a reliable indication of whether or not platelets are functioning normally, which is of particular importance when haemophilia or the purpuras occur. We need only a blood vacuum tube or a 20-gauge needle with syringe and a clean, dry test tube. Blood is taken from the arm in sufficient quantity to make a column 2 or 3 inches high in a

test tube. Place the tube in a tumbler or rack and note the degree of contraction which takes place in the clot at room temperature one or two hours after the blood is withdrawn. Normally the clot contraction leaves a slight margin of clear serum within one hour and a definite margin in two hours. Contraction is complete in 24 hours. Contraction of the clot is the final phase in the clotting process and is an important test to determine the lack of coagulation power of the blood.

Delayed clot contraction occurs in purpuras, leukemias, aplastic anaemias, some severe infections, haemophilia and in advanced liver disease. In haemophilia the contraction is delayed but once formed, the clot rapidly contracts. At first the serum goes to the top and the cells settle to the bottom, but finally it coagulates.

Three of the more common major dyscrasias which must be recognized are:

1. *Haemophilia* – a qualitative deficiency of the blood platelets;
2. *Leukemia* – a pathological blood defect;
3. *Thrombocytopenic Purpura* – a deficiency of the blood-clotting elements.

A fourth, *Capillary Fragility*, is more of a vascular defect than a blood dyscrasia. It is very rare but is mentioned here as contributing to the difficulty in control of a post-extraction haemorrhage. A Case Report will be given.

In five cases of severe bleeding recently encountered, two were haemophilias; one an undifferentiated leukemia; one had a history of bleeding in the presence of a chronic low-grade oral infection, and the other a case of vascular fragility known vaguely as "Idiopathic Haemorrhagic Diathesis," meaning – "Fragility of the capillary walls with no known cause."

In Haemophilia there is no lack of prothrombin; therefore the administration of Vitamin K is of no value. All factors of coagulation are present in haemophilic blood with the exception

that the platelets, though present in normal numbers, fail to function actively and the addition of these in the form of transfused blood restores to normal the coagulation time. Hence the value of blood transfusions in the control of haemophilic bleeding. This "restoration to normal" applies also to the leukemias and purpuras. If there is a delayed clotting time, effort and injury to the patient will be notably lessened by the immediate use of transfusions, sutures and pressure in that order.

The addition of transfused blood to the patient's blood, thus reducing the coagulation time to within normal limits, is the basic treatment in the control of the haemorrhage. It must also be remembered that with severe haemorrhage and loss of blood, the haemoglobin of the blood will be markedly reduced to 50 or less (the average being 80-90 based on 100). One or several transfusions will elevate the haemoglobin, reduce the clotting time to within normal limits and indirectly promote healing.

A transfusion in itself is not sufficient to control bleeding. It must be attended with the proper surgical procedure, i.e., cross-suturing and pressure. Oxycellulose packed tightly into the tooth socket followed by tight cross-suturing of the socket is the second step. This is followed by the application of pressure, either digital or by the use of a denture or compound splint in which an impression of the arch is taken and the inner surface of the splint, which is resting over the bleeding socket, is lined with gauze previously soaked in a haemostatic agent. This is inserted into place and pressure applied. (Figs. 1,2,3,4 and 5).

CASE REPORT #1 - HAEMOPHILIA:

Mr. C., white, male, age 29, presented on October 28, 1952, for multiple extractions.

Past History: Before any examination was made, he announced that he

was a haemophiliac and had had difficulty with bleeding ever since childhood. He stated that following his last extraction he had been hospitalized and given seven transfusions before bleeding was checked. When his appendix was removed some years ago, there were fifteen transfusions during a hospitalization of five months. There was a history of bleeding in his mother's male family, his brother and himself.

Oral Examination: Examination revealed almost a full complement of teeth with the exception of the third molars. X-Rays revealed that all four were submerged. Fourteen teeth were beyond repair, the remaining dentition being in an unusually good condition.

Immediate Treatment: The patient was referred for a Lee White clotting time which proved to be eleven minutes. He was then referred to a prosthodontist for impressions of both arches and an occlusal bite. The patient was admitted to hospital on November 2, 1952 and retained several days for blood examination and grouping and for tests with synthetic coagulants.

Nov. 7, 1952

Urinalysis and Haematology:

Urinalysis and blood sedimentation were normal.

R.B.C.	—	4,900,000
W.B.C.	—	6,300
Polymorphs	—	60%
Lymphocytes	—	32%
Monocytes	—	1%
Clotting Time	—	10½ minutes
Haemoglobin	—	94
Platelets	—	299,400

Orders were left for the injection intramuscularly of a synthetic coagulant, the clotting and prothrombin utilization to be noted 1, 6 and 24 hours after dosage. The results were so varied that the effectiveness of the coagulant was questionable, and it was decided to proceed with the extractions, using the prescribed methods of treatment with the coagulant as an adjunct.

Nov. 12, 1952

Pre-Operative Orders:

S. R. Penicillin - 400,000 units daily;
10 cc's of the coagulant I.M. 2 hours
pre-operative;
5 cc's coagulant 8 hours postopera-
tive. Repeat when necessary;
500 cc's whole blood without anti-
coagulant.

Note: The teeth to be extracted were cut from the models, and the compound splints were prepared for post-operative use. (Figs. 1, 2 and 3). It will be noted that the splints were constructed so that the remaining teeth could come into centric occlusion. When the gauze lining was applied and the splints inserted, the bite was opened slightly; but if enough pressure were applied, the teeth could again come into centric occlusion. (This pressure was the last of the three requirements for control previously mentioned).

Nov. 13, 1952

Operation:

The fourteen teeth were removed under general anaesthesia, the sockets packed with oxycellulose and tightly cross-sutured. After recovery 500 cc's whole blood were given in transfusion.

Nov. 13, 1952

Progress Report:

No bleeding occurred until evening when the lower left molar area began to bleed profusely. The splints were inserted and pressure applied for 20



FIG. 1. Preoperative models, Case Report No. 1, preparatory to making compound splints.

minutes. Splints removed. Bleeding was controlled.

Nov. 14, 1952

The left molar area again haemorrhaged. The splints were inserted and



FIG. 2. Compound splints prepared. Gauze, soaked with a mixture of tannic acid and glycerine is inserted.





FIG. 3. Compound splints inserted. Pressure is applied and sustained for 20 minutes.

pressure again applied for 20 minutes. The splints were removed and bleeding was under control.

Nov. 15, 1952

No further bleeding until evening, when the lower left molar area began to bleed profusely. Successive insertions of the splints failed to control bleeding. Blood loss was estimated at 1500 cc's and an equal amount was ordered for transfusion. The haemoglobin was down to 50. With the use of transfusions and the compound splints, bleeding was brought under control.

Nov. 16, 1952

No bleeding.

Nov. 17, 1952

Bleeding began from both the lower left and right molar areas and the upper bicuspid area. The patient was removed to the treatment room and under local anaesthesia all three areas were tightly resutured. The splints were again inserted, pressure applied for 20 minutes and the splints removed. Bleeding was controlled.

Nov. 18, 1952

Only seepage was present but 500 cc's were again administered as a precautionary measure. There was no further bleeding after this date. Healing was progressive, but the patient was retained in hospital for precautionary reasons until healing was nearly complete. Sutures were removed on November 29th and the patient discharged on December 2nd. Total hospitalization was four weeks, with a blood intake of 3000 cc's given in six transfusions.

CASE REPORT #2 - HAEMORRHAGE IN ACUTE UNDIFFERENTIATED LEUKEMIA.

Mrs. J. P., white, female, age 48, referred on May 29, 1952 for control of postoperative bleeding in the upper right maxillary area.

Past History: Has had periodontal involvement for years. No history of Tuberculosis. Always bruised easily. Had minor obstetrical surgery four months ago with no postoperative bleeding. Blood tests were normal at that time. Has been working ever since with no weight loss. Had several teeth removed a year ago with no unusual bleeding.

Present History: On May 10th had four lower right posterior teeth removed. No postoperative bleeding. On May 21st had four upper right posteriors removed, after which bleeding was slow and continuous. Her family dentist had sutured the sockets but bleeding continued. She was referred on May 29th.

Oral Examination: Patient pale and exsanguinated in appearance, but quite vivacious. Examination revealed progressive healing in the lower molar area but the region of the recent extractions in the upper right area exhibited slow seepage. The sockets had been sutured but the sutures were loose and ineffective. The remaining teeth were calcareous. The paradental tissues were deep red, and suppurative with pressure on the gingival margins.

Immediate Treatment: Under local anaesthesia the old sutures were removed, the sockets cleansed and then packed with oxycellulose. The sockets were resutured and the patient instructed to bite on a gauze packing soaked with a haemostatic until the bleeding stopped. When bleeding was under control the patient was discharged for one week with instructions to return if bleeding resumed.

On May 31st, two days later, patient returned with bleeding from the sockets continuing. One noticeable difference was the presence of a large ecchymosis on the right cheek. When comment was made on this fact, she stated she was covered with similar spots all over the body. The patient was hospitalized on the same day and a complete blood examination and grouping was requested. (It is interesting to compare the haematological results of this case with those of Case #1). The following was revealed:

R.B.C.	-	2,370,000
W.B.C.	-	4,000
Polymorphs	-	13%
Lymphocytes	-	51%
Monocytes	-	2%
Clotting Time	-	10 minutes
Haemoglobin	-	39
Platelets	-	23,700

An internist and pathologist were requested for consultation after which a sternal puncture was ordered for examination of sternal marrow and an immediate transfusion of 500 cc's of blood given.

Pathological Diagnosis — Undifferentiated Leukemia.

In all, eight transfusions of whole blood were given and three transfusions of fresh blood together with drip administration of A.C.T.H. and oral administration of Compound F. Nevertheless, the patient expired on June 14th. The apparent sudden onset of

the disease cannot be explained—the disease had probably been present but had not reached a significant level.

In this dyscrasia the multiple transfusions and cross-suturing controlled the bleeding and there was no further seepage after the third day of hospitalization.

CASE REPORT #3 — SEVERE BLEEDING IN THE PRESENCE OF LOW-GRADE INFECTION.

January 12th, 1953, Mr. J.W., white, male, age 20, presented for full extraction.

Present and Past History: He stated that with each extraction over the past years he had to be admitted to hospital for about one week and always had had one transfusion. In October 1952 an upper left molar had been removed in hospital and the records revealed a clotting time of 5 minutes and a bleeding time of 4½ minutes. 500 cc's of blood had been given.

Oral Examination: Oral examination revealed the presence of almost a full complement of teeth. Only four teeth missing. Mouth was in a very unhealthy condition; caries were rampant and hardly a tooth was worthy of repair. The gingival tissues were deep red and swollen.

Immediate Treatment: Patient was referred for a Lee-White clotting time, which was 10½ minutes. Due to the clotting time and the condition of the mouth, it was decided to hospitalize the patient and do one arch only, leaving the mandibular arch for a future date. He was referred to his family dentist for the preparation of an immediate upper compound splint (Fig. 4), which I intended to use as a pressure splint postoperative to the extractions. Patient was admitted on January 20th with request for complete blood examination and grouping.



FIG. 4. Compound splint of the maxillary arch after a full upper extraction. Gauze, soaked with a mixture of tannic acid and glycerine is inserted into place.

Haematology:

R.B.C.	—	4,270,000
W.B.C.	—	9,600
Platelets	—	315,000
Clotting Time	—	6½ minutes
Haemoglobin	—	81
Polymorphs	—	67%
Lymphocytes	—	29%
Monocytes	—	3%

Pre-Operative Orders:

S. R. Penicillin — 400,000 units daily;
500 cc's blood without anti-coagulant.

Jan. 21, 1953

Operation:

On January 21st, under general anaesthesia the remaining 14 maxillary teeth were removed and the sockets cross-sutured. There was slight bleeding after recovery from the anaesthesia. The splint was lined with gauze soaked with a haemostatic and inserted under pressure until bleeding was controlled, (Figs. 4 and 5). Instructions were given to the patient on the use of the splint if, and when-

ever, bleeding commenced. There was no further bleeding that day.



FIG. 5. Compound splint inserted. Digital pressure is applied and sustained for 20 minutes.

Jan. 22, 1953

In the early morning bleeding started in the region of the right cuspid. The splint was repacked with fresh gauze and haemostatic and inserted. Estimated loss of blood was 500 cc's, so an equal amount was given in transfusion. There was no further bleeding for three days.

Jan. 25, 1953

Seepage occurred around the upper right bicuspid and anteriors. The splint was repacked and reinserted and another 500 cc's of blood given. In 20 minutes the splint was removed. There was no further bleeding from then on.

Jan. 28, 1953

Sutures were removed but the patient was retained in hospital for a few days for precautionary reasons.

Feb. 3, 1953

Patient discharged. Total hospitalization was 14 days, with a blood intake of 1500 cc's given in three transfusions.

CASE REPORT NO. 4

CAPILLARY FRAGILITY

June 9, 1953

Mrs. S., white, age 41, presented on June 9, 1953 having been referred for the extraction of the upper right second molar.

Past History: Her physician had contacted my office and revealed that the patient had had periodontal disease over the past few years. She had had severe nose bleeds for the past six years, together with a history of bleeding from a scalp laceration. She had no past operative history, but due to a tendency to ecchymosis from very little pressure on the skin, had been hospitalized on two previous occasions for the purpose of blood study. Although patient was diabetic and had a suspected cirrhosis of the liver, all blood tests were within normal limits, both qualitative and quantitative. Her physician was hesitant of any major surgery and her family dentist was endeavouring to preserve her teeth as long as possible. Her physician's diagnosis was "Idiopathic Haemorrhagic Diathesis"—a vague term meaning a capillary fragility with bleeding — cause unknown.

Oral Examination: Examination revealed a full complement of teeth which were free of active caries. The teeth were slightly loose and extensive resorption had taken place. The gingival tissues were deep red in colour and the upper right second molar was quite loose.

June 9, 1953

Immediate Treatment: Under local anaesthesia the tooth was removed after which the socket was packed with oxycellulose and tightly cross-sutured. S. R. Penicillin, 400,000 units, was given intramuscularly. Bleeding was controlled but the patient was instructed to return if bleeding commenced.

Progress Report: Although the patient did not return or call the office, it was later discovered that seepage had been continuous and she arrived at the hospital emergency ward in a state of impending shock on June 17th. Blood pressure on arrival was 80/50. A large ecchymosis was present on the right cheek. She was immediately admitted to hospital and given 500 cc's blood

after which the socket was resutured. A second transfusion was given the following day and her blood pressure rose to 120/62.

Urinalysis and Haematology during Hospitalization:

Sp G	—	1.053
Reaction	—	6.0
Albumen	—	+3
Sugar	—	+1
Acetone	—	Positive
R.B.C./H.P.F.	—	+1
W.B.C./H.P.F.	—	Packed in clumps
Epith	—	Few
Bacteria	—	Numerous
Haemoglobin	—	80
Clotting Time	—	7 min.
Bleeding Time	—	1½ min.
Haematocrit	—	37%

June 19, 1953

Patient discharged from hospital with bleeding controlled.

June 23, 1953

Patient visited the office and examination revealed the presence of a large liverish clot distending the gingival walls of the socket. Under local anaesthesia this clot was removed and the tissues again tightly cross-sutured. Compressed gauze was soaked in a haemostatic and placed over the socket and the patient instructed to apply digital pressure and hold the pack firmly in place for 20 minutes. After this time the gauze was removed, a new clot had formed and bleeding was controlled. The patient was dismissed with instructions to return if bleeding resumed. There was no further bleeding and the patient returned the following week for the removal of sutures and was discharged.

SUMMARY

These four Case Reports illustrate the importance of a complete case history being taken when a patient mentions a tendency to severe bleeding. With such a history we are able to plan a method of control and be prepared for any potential difficulties in treatment. If there is a history of

excessive bleeding, a clotting time based on the more accurate Lee White method, and Clot Contraction test for indication of platelet function, should be requested. It is interesting to note, however, that even with this method the dyscrasias will sometimes show variations in clotting time in every instance the blood is tested.

Not mentioned in these Reports were medicated dosages of Ferrous Sulphate, to aid in building iron in blood and Vitamin C, to aid in tissue healing. These were given in capsule form, each capsule containing 5 grs. Ferrous Sulphate and 50 mgms. Vitamin C—Dosage: 1 Cap. T.I.D. Synthetic coagulants were also given to promote faster coagulation. This additional medication gave no evidence of being helpful.

There are four stages in the treatment of uncontrolled bleeding:

- (1) Pre-operative transfusion;
- (2) Oxycellulose pack with tight cross-suture;
- (3) Compound or denture splint for the application of pressure;

(4) Postoperative transfusion.

If these four stages are adhered to, they will be found sufficient to control haemorrhagic bleeding postoperative to exodontia in the presence of most of the major dyscrasias. It is the exception that proves the rule, but for the majority of patients with haemorrhagic tendencies requiring specialized care, the above method of treatment and control will be found sufficient. It must be remembered that we are not treating the disease, but rather we are treating and controlling a localized condition until healing has occurred.

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CORONARY HEART DISEASE

Q.—What precautions should be taken when carrying out routine exodontic procedures on a patient with a history of a previous coronary occlusion?—M.H., Rochester, N.Y.

A.—Since the essential pathology in coronary heart disease is diminution of the lumen of the coronary vessels, it is of extreme importance to avoid any procedure or medication that might precipitate additional reduction of the lumen. It is therefore advisable to prescribe preoperative sedation in

all such cases to prevent undue excitement and apprehension. In all instances, it is wise to avoid using epinephrine in any local anaesthetic solution, since this furthers generalized vasoconstriction and increases heart rate and blood pressure. Almost without exception, patients with a history of a previous coronary occlusion can be treated with complete safety if these precautions are followed. The amount of surgery done on any one occasion should be kept down to a moderate degree.

From Jour. of Oral Surgery

"Success in life is a matter not so much of talent or opportunity as of concentration and perseverance."—C. W. Wendte

The Hydrocolloid Technique For Restorative Dentistry*

by ROSS C. LINDLEY, D.M.D., Seattle, Washington.

DURING my twenty-eight years in practice I have completed many restorations, both direct and indirect, yet I have found myself wishing again and again for some satisfactory answer to the problem of providing more accurate measurements for indirect restorative dentistry. I imagine that every dentist has, at one time or another, been conscious of the same need. The conventional procedure of taking an indirect impression with a copper band and wax, although it seems simple enough, involves certain difficulties which are hard to surmount. It has been my experience that the wax pattern contained within a band is apt to be inaccurate, no matter how much the copper band is contoured and relieved. (Wax is one of the most critical materials we work with; it is very sensitive to thermal changes.)

The distortion in removing the wax impression is at least partially due to the bell-shaped contour of normal teeth plus the angle of removal. In removing the wax pattern in a copper band (even when the band is properly contoured) there is frequently a distortion at the mesial-lingual-gingival or the mesial-buccal-gingival. In the case of a tooth with a pronounced bell-shape, there is often distortion of the distal portions of the tooth as well. The end-result of such a procedure is a single, isolated die—a snap wax impression of your preparation. The dentist, therefore, because he has no precise means of correlating this die with other teeth, must be something of a sculptor, or freehand artist, and depends upon guesswork for the contour, contacts, and occlusion. It is true that many dentists develop considerable mechanical dexterity in carving the wax pat-

tern. But the element of guesswork is never completely eliminated. The operation is time-consuming as well. Furthermore, if Lady Luck does not smile upon your efforts, it can be extremely hard on your disposition!

Because of my dissatisfaction with the traditional methods and my consequent wish to arrive at some solution to the problem which would be at the same time simple and precise, I became interested in hydrocolloids. My experimentation over a period of years has led me inevitably to the conclusion that *the hydrocolloid procedure makes restorative dentistry more enjoyable for all concerned*. It makes easier the work of the operator, the assistant, and the laboratory technician; and it is far less trying and less time-consuming for the patient. It is my belief that increased precision and efficiency have been brought to restorative dentistry through the use of hydrocolloid impressions in connection with such an accurate base as the Typadon. One impression, properly taken by this method, can yield results as accurate as are possible with the materials we have at our disposal at the present time.

BRIEF HISTORY OF THE TECHNIQUE

The use of the indirect hydrocolloid technique in restorative dentistry is a relatively new development. Although the technique has been employed for twenty-five years, it is actually only within the last decade that proper controls of the factors of time and temperature have brought the procedure to its present level of perfection.

My own introduction to hydrocolloid was in 1926. I recall that at the first Pacific Coast Conference in that year a clinic was presented using *Dentocol*

*Presented to the Western Canada Dental Society Convention, Jasper, Alberta, June, 1953.

with copper bands for indirect restorations. Some may remember the large Dentocol guns for boiling the material. Hydrocolloids were used in those days primarily for partials, orthodontic and study models. These early materials all had fibrils as binders, as something was needed to hold the material together. Subsequent research has eliminated the necessity for such crude and primitive binders.

In 1937, A. W. Sears¹ published an important article on the use of reversible hydrocolloid technique in operative dentistry, the first such article to appear. It was followed by articles reporting the research of Thompson, Phillips, Paffenbarger, Spiro (who worked largely with alginates), and others. All of these men have made significant contributions to the advancement of this technique. Particularly noteworthy has been the work of Walter J. Van Rossem. Formerly with Handy and Harmon, Mr. Van Rossem has done experimental work for several of the large companies, and has recently developed a hydrocolloid of his own which he manufactures under the name "Van R." The dental profession is indebted to Mr. Van Rossem for his generous expenditure of time and effort. I have had occasion recently to correspond with him concerning the physical properties of hydrocolloid, and he has been most gracious in his assistance.

Perhaps the most recent contribution to the growing body of literature on hydrocolloids is the excellent article by Morris J. Thompson². I enthusiastically recommend a careful reading of this article; it is one of the best I have seen.

Pioneered by the men whose names I have mentioned, and advanced by the research and experimentation of many others, the hydrocolloid technique has been raised to a high level of precision and excellence. Hydrocolloids were not commonly used during World War II because of scarcity of materials, but they have received widespread accept-

ance during the last few years. Recently commercial organizations have been engaging in hydrocolloid research.

PHYSICAL PROPERTIES OF HYDROCOLLOID³

Before proceeding with a detailed description of the technique itself, a few preliminary observations must be made concerning the physical properties of hydrocolloid. An understanding of these properties is important in order that the technique may be most successfully employed.

In solution, this material is a colloidal suspension of agar in water; in its gelled condition, it is a suspension of water in agar. The viscosity of the material varies with the temperature level. This means that the hydrocolloid must be thoroughly melted, and kept thoroughly melted until it is placed in the mouth. There is nothing in the routine of melting, storing, or tempering that affects the accuracy of the impression as long as the material is kept fluid, and free from partially solidified portions. To prevent such partial solidification, the tray should be warmed before loading it with material. If any of the material becomes gelled either in the tray or in the storage bath, it will not remelt in any temperature below 200°F. All tubes and syringes should be reheated to a temperature above 200°F., if only for five minutes, after they have been out of the storage at all. This will insure a completely fluid substance, free from the curd-like structures which form when the molecules stick together at lower temperatures.

When such precautions are taken, cooling in the mouth is the only place that shrinkage can occur. (Any shrinkage that takes place is in the water in the solution, and is brought about by cooling.) The development of hydrocolloids that gell at higher temperatures has reduced the danger of shrinkage to a minimum. Ice water should never be used in cooling the tray; it will shock the material and draw it away from the teeth. After gelation,

the water suspended within the gel controls the size of the impression. The agar holds the shape it took as it gelled about the teeth and soft tissues. The operator's task is to make the original impression as accurate as possible by carefully filling all spaces and avoiding air pockets, and by holding the tray securely in place during gellation.

As previously indicated, the melting point of the hydrocolloid material is over 200°F. The melting action is not similar to the dissolving of salt in water, but is an actual tearing apart of the adhered molecules of agar into a colloidal suspension in water. As Dr. Dean of Portland University put it, "Agar is a true polymer needing only heat to break it down." As the material cools, the movement of the molecules slows down to a point where the mass attraction is greater than the inertia of the movement, and the gel occurs. With most hydrocolloids, this critical point of gelation is reached somewhere between 96°F. and 113°F., usually at about 103°F. "Van R." gels at a slightly higher temperature—about 108°F.—113°F.—or about ten to fifteen degrees above body temperature. Hydrocolloids of high gel point insure the greatest accuracy, since they set *toward the teeth*, instead of toward the tray. A material which gels at a point only a little above body temperature is kept slightly warm by the teeth, and therefore tends to be drawn to the cooling surface of the tray. High gel point hydrocolloids also require less time in the tempering bath. Three to four minutes at 117°F. is most satisfactory. At this temperature the material does not set too hard to use, nor is it uncomfortably warm to the patient's mouth. This temperature is also sufficiently close to the gel point of the material so that only a few degrees of fall are necessary. If for any reason it is desirable to prolong the tempering time, the temperature of the tempering bath should be raised to 123°F.

When the impression is removed from the mouth the contained water

continues to evaporate until room temperature is reached. This creates a slightly water-shy material. However, by immersing it either in a 2% potassium sulphate solution or water for ten to fifteen minutes (never over thirty) minutes, you replace this lost water, compensate for the shrinkage, and restore the accuracy of the impression. I prefer potassium sulphate for this purpose, because of its plaster-hardening properties.

THE INDIRECT HYDROCOLLOID TECHNIQUE

I should like to explain in as much detail as possible the procedure which I follow in making multiple restorations from a reversible colloid impression on the Typadon base. I shall begin at the beginning with the preparation of the teeth and retraction of the gum tissue. I shall then describe the method of taking the impression. I do not suggest that this is the one and only way in which this can be done. There is, as far as I know, no single "right way." There are many right ways. A great many competent operators have spent years in the development of this procedure. Even the most expert among them differ widely on certain particulars. They don't all use the same colloids; they don't all use the brush; they don't all use the guns; they differ as to the efficiency of potassium sulphate baths. Excellent castings are being made today by many methods. This is as it should be; such experimentation has brought about progress. Continued progress will depend upon the willingness of dentists to experiment, to discover what materials and methods fit their own procedures best. What follows, therefore, is a description of the methods I have found most satisfactory.

Preparation of the Teeth

I generally use X-rays in making my diagnosis as to the teeth to be restored and the type of restoration needed. After making the diagnosis, the first step is, of course, the preparation of

the teeth with diamonds, stones, carbide burs, instruments and discs. I do want to emphasize the paramount importance of painstaking cavity preparation. The dentist must assure himself that each preparation is as nearly perfect as he can make it. I might point out in passing that although much of the preparation may be accomplished before applying the rubber dam, I always apply the dam to complete the preparations.

When the dam is removed, the assistant should fill the proper tray for the hydrocolloid impression. While the tray is in the tempering bath, the gingival tissue is retracted from the preparations, and with a few exceptions this tempering period provides ample time for the operator to accomplish the retraction of the gum tissue.

Retracting the Gingival Tissue

One of the greatest difficulties in all types of restorative dentistry is the exposing of the gingival margins. This is especially essential when using hydrocolloid, since the *colloid does not displace tissue*. My routine, usually, is to administer fifty milligrams of Banthine, taken orally after the patient is in the chair. This will dry up the flow of saliva by the time the preparations are completed. If a partial impression is to be taken, the Banthine should be taken one hour before the appointment time.

I have stated that exposing the gingival margins is one of the greatest problems of this impression technique. I want to emphasize that in displacing tissue for this procedure, *the tissue is not depressed, but is forced away from the tooth*. The height of contour of the gingival tissue will then be approximately the same, but it will be displaced away from the tooth so that the colloid can be inserted between the tooth and the gum. In inter-proximal areas where there is loose, flabby tissue, surgical removal of excess tissue may be necessary.

In the preparation, the gingival finish

line should be carried below the gingival crest approximately one-half millimeter. Retraction may be accomplished by several methods. Mechanical or surgical means, styptics, and cautery are all used with varying success. My own feeling is that cautery should be used sparingly. Adrenaline Chloride 1/100 or 1/200 may be used in normal retraction. Under ideal conditions it is possible to take a colloid impression with the rubber dam in place, without retracting the tissue. I have done many of them that way.

A word about the use of styptics. Zinc chloride should never be used in solution, in the mouth; it is not self limiting in its action and a terrible burn or sloughing of tissues can result. Application can best be accomplished by previously soaking kite string or yarn in zinc chloride, 10 or 20 percent, and allowing it to dry. Mild haemorrhage can be controlled and retraction accomplished at the same time by using a spray of Hemolox powder (Coe) or by applying Hemalgin paste (D.P.) on a string. To obtain retraction, the string or yarn previously prepared is tied around the tooth, or small fragments placed in the interproximals, and gently pressed under the gingival. Cotton rolls should be placed previous to starting the retraction to insure a dry field and prevent the dilution of the styptic or haemostatic, and consequent minimizing of the retracting action.

The string can be held and retraction facilitated by placing a rubber band, prepared from a diagonally cut section of a catheter tube, over the tooth. Elasticity will be temporarily lost and the rubber band more easily handled if it is dipped in chloroform immediately before using. As the placing of the rubber band is sometimes extremely difficult, I usually stretch the rubber band over an unannealed copper band approximately the same size as the crown of the tooth, place the copper band over the tooth, and push the rubber band onto the tooth. Or if an old nasal retractor can be secured, it is

possible to place the rubber band more easily with this instrument.

The time required for retracting the gingivae is from five to ten minutes, depending upon the nature of the case, the number of teeth involved, and the kind of styptics used.

Taking the Impression

The teeth having been prepared and the gum tissue retracted, the next step is the taking of the colloid impression. Before discussing this procedure, however, it is pertinent to discuss some of the preliminary duties of the dental assistant. It is important that these preparatory steps be taken so that the impression may be made with the least possible interruption.

The first thing in the morning, the hydrocolloid unit should be turned on and allowed to heat for a few minutes. Care should be taken to see that the water in the baths is at the right level. Next, the small guns should be filled and sealed and placed, together with enough colloid material for an average day's work, in the boiling compartment. (After heating, the small guns are very easy to load. The hydrocolloid is simply squeezed directly from the tube into the gun. Now the boiling dial should be turned to ten minutes, if the machine is hot—to fifteen minutes if it is cold. After boiling ten to fifteen minutes, the guns and colloid material should be moved to the storage well, which is kept at 145°F. – 150°F., where they may be stored all day—provided they are not kept out of the bath too long while the impression is being taken. In the latter case, they must be reboiled.

The hydrocolloid material should be placed in the storage well as least fifteen minutes before it is put in the impression trays. The filled trays are placed in the conditioning or tempering well, which is kept at 115°F. – 120°F. The conditioning time for the filled trays varies according to the size of the tray and the bulk and type of mate-

rial used. As various hydrocolloids respond differently, it may be necessary to make minor adjustments in time and temperature, depending upon the material chosen.

A thermometer, convenient for checking temperatures, is kept in the storage well. It is wise to test the temperatures of the baths at least once a week, as the thermostats will change over a period of time. The dials on the front of the Thompson unit are the thermostats for each corresponding well, and can be regulated very easily.

While the operator is retracting the gum tissue, the assistant should be making final preparations for the impression. She connects the hose to the cold water system, and places the small gun (or brush material if the brush method is preferred) on the operating table. In order to get the perfect detail of the preparations, the field for taking the impression must be perfectly dry. This is absolutely imperative. While the operator dries the teeth and places the warmer hydrocolloid in the preparations with the gun or brush, the assistant attaches the tray to the hose, removes excess material with a sharp knife, or simply tamps the material on a dry towel, and hands it to the operator *for immediate insertion* in the mouth. Trays should be applied with light, even pressure. When the tray is properly seated on the arch, the assistant, at the doctor's signal, turns on the cold water and sets the timer. Gelation is a product not only of temperature but of time. Perforated trays are chilled at least six minutes, water jacketed trays five minutes. The tray is then removed from the mouth with a single, quick motion, rather than being gradually dislodged by a rocking action. If the case is to be correlated, secure the impression of the opposing arch, take a thin wax bite of the full arch, or bi-laterally. When the impression is completed, and you are satisfied there are no voids on the margins of the impression, you are ready to place your temporary fillings or plastic re-

storations that have previously been prepared.

Pouring the Model on the Typadon Base*

The next step is to pour the impression on the Typadon base. In this technique we make *only one pour*. In eliminating the second pour used by many operators, I followed this line of reasoning: We never take two impressions for a direct or indirect inlay; we never take two impressions for a partial or denture and attempt to use them both, because we know it is a physical impossibility to secure two precisely the same. Why then should we take two impressions when making finer and more intricate reproductions of the dental

arch? My experience teaches me that there are tiny discrepancies in the two supposedly identical models which cannot be detected with the eye, or even with the loops. These discrepancies are caused by air trapped in the angles of the preparations — especially in multiples. In my estimation, one of the chief advantages of the Typadon is that it produces accurate results with *one impression and one pour*.

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3. I should like to acknowledge the assistance of Walter J. Van Rossem, given in correspondence.

CLIMATE AND ENDEMIC DENTAL FLUOROSIS

by DONALD J. GALAGAN, D.D.S., M.P.H., and GLENN G. LAWMSON, Jr. A.B

1. The prevalence and severity of endemic dental fluorosis in 726 children were studied in six Arizona communities. The cities were located in a desert area, with mean annual temperatures of approximately 70° F., mean relative humidities of approximately 37 per cent, 80 to 85 per cent of possible sunshine, and extremely high daytime temperatures.

2. In water supplies of the Arizona Communities studied, concentrations of fluoride above 0.8 ppm resulted in objectionable dental fluorosis; concentrations of 0.6 to 0.8 ppm resulted in an occasional diagnosis of fluorosis, concentrations below 0.6 ppm did not cause objectionable fluorosis.

3. Comparisons of the community fluorosis indexes for the Arizona communities with those obtained from selected midwestern communities indi-

cate that fluorosis occurs at about twice the intensity in that section of Arizona as it does in the midwestern area with comparable fluoride concentrations but markedly different climatic factors.

4. Variation in temperature, radiant heat gain and relative humidity have been discussed as possible influential factors in the observed differences in endemic fluorosis between the two areas.

5. The application of a single biological test in two areas suggests that, because of several climatological influences, Arizona children drink more water than children living in more temperate climates. As a result, there is increased ingestion of fluoride in relation to the concentration found in the water supply.

The Forum

GENERAL ANAESTHESIA FOR OFFICE ORAL SURGERY

*From discussion of Dr. SELDIN'S paper in N.Y. State D. Jour., Jan. 1953
by W. T. EWING, D.D.S., Akron, Ohio*

Office anaesthesia in oral surgery concerns the ambulatory patient and necessitates balanced anaesthesia in order to ensure maximum oxygen intake with a short recovery period.

I do not feel that three of the agents discussed have a place in office anaesthesia. These drugs are: ethyl ether, ethylene, and ethyl chloride. Ethyl ether, even in balanced anaesthesia, has a far too long and violent (nausea and vomiting) recovery period for office anaesthesia. Ethylene is far too explosive, and ethyl chloride, as a general anaesthetic, has far too small a margin of safety for office use. Since we have such a wide choice of other good agents at our disposal, I feel that the above mentioned three agents should be completely omitted from a paper on office anaesthesia.

The use of surital sodium or pentothal sodium in combined anaesthesia with nitrous oxide-oxygen seems at the present to give the best balanced anaesthetic for office use. The method of administration of either barbiturate is a matter of choice. The key to over dosage, prolonged and complicated recovery, or laryngospasm is not the particular barbiturate used or its method of administration. Rather, it is the anaesthetist's ability to maintain the patient continuously in a safe, comfortable, surgical plane of anaesthesia at all times with a combination of anaesthetic agents. Complications in

anaesthesia may arise regardless of drugs or administration, and as frequently with one method as with another, depending entirely on the anaesthetist's and the surgeon's knowledge.

I feel that even for normal patients requiring a short anaesthetic for a minor procedure, the combined anaesthesia of pentothal sodium and nitrous oxide-oxygen is indicated. Because of the impotency of nitrous oxide-oxygen anaesthesia, a varying degree of anoxia is always produced in order to have surgical anaesthesia, even in a very short procedure. Small amounts of pentothal sodium can be added with the result that anoxia never need occur and a desirable short recovery period is still obtained. A nitrous oxide-oxygen anaesthetic then is no longer the anaesthetic of choice even for short procedures for anaesthetic advancements have given the oral surgeon safer anaesthesia. We still may have anoxia through errors in judgment, but we no longer need to have any at all by choice.

It must be remembered that debilitated patients and those who are poor physical risks may be most safely handled by the medical anaesthetist in the hospital. Good office general anaesthesia in oral surgery is always dependent on the good judgment of the oral surgeon in determining poor risks for office anaesthetic. Many times this is as important as the choice of anaesthetic agents.

PREVALENCE AND INCIDENCE OF ALVEOLAR BONE DISEASE IN MEN

by CHARLES M. BELTING, D.D.S., M.S.; MAURY MASSLER, D.D.S., M.S., and
ISAAC SCHOUR, D.D.S., Ph.D., Chicago.

Summary and Conclusions of article appearing in the J.A.D.A. — August, 1953.

The prevalence and incidence of alveolar bone disease and edentulousness in a representative sample of the adult male population in Chicago were determined from combined oral and roentgenographic examinations of 5,014 individuals ranging in age from 20 to 80 years. These persons were examined without selection at the Veterans Administration Regional Office Outpatient Dental Clinic and represented for the most part the healthy veteran population in the Chicago area. The observations were:

1. Periodontitis simplex (as evidenced by moderate to severe gingivitis, gingival pockets and horizontal resorption of bone) was already present in 3 per cent of the male population at 20 to 24 years of age. The number of instances increased steadily to affect 20 per cent of the population at 45 to 49 years of age. Thereafter the number of cases decreased as the teeth were lost and the patients became edentulous.

2. Periodontosis and periodontitis complex (early and late periodontosis characterized by vertical resorption of bone) could not be distinguished with sufficient objectivity to make the observations statistically reliable. These two entities made their appearance in men somewhat later (that is, after 25 to 29 years) than did periodontitis simplex but the course was more rapid. The peak was reached at the same age level (45 to 49 years) and tooth loss appeared to follow at about the same rate.

3. The incidence of all alveolar bone diseases combined (the morbidity rate) reached a peak at 45 to 49 years of age when 42 per cent of the male population at 20 to 24 years of age. The num-

ber of instances increased steadily to affect 20 per cent of the population at 45 to 49 years of age. Thereafter the number of cases decreased as the teeth were lost and the patients became edentulous.

4. The incidence of edentulous patients (the mortality rate) was low before 34 years of age. In these instances, the teeth were lost largely because of caries.

Thereafter the number of edentulous patients increased rapidly in geometric fashion from 5 per cent at age 30 to 34 years to 38 per cent at 70 to 80 years. Edentulousness after the age of 35 years appeared to be caused largely by alveolar bone diseases.

5. The morbidity rate plus the mortality rate was considered as the attack rate and gives the true natural course of this class of diseases. The attack rate increased extremely rapidly from 20 to 50 years of age, 6 per cent being affected at 20 to 24 years and 53 per cent becoming affected at 45 to 49 years of age. From 50 to 70 years of age, the attack rate did not increase significantly. This indicates that few new instances of alveolar bone disease are added after the age of 50 years. However, loss of teeth and edentulousness resulting from alveolar bone disease increased rapidly. After 70 years, a sharp rise in the attack rate again occurred, due mainly to a sharp increase in the number of edentulous patients.

6. There were slight differences in the prevalence and incidence of periodontosis in negroes and whites but not in periodontitis simplex. There was also a tendency for fewer edentulous patients to appear in the negro population.

ANNOUNCEMENTS

● **NUTRITION PHOTOGRAPH CONTEST.** The Nutrition Division of the Dept. of National Health and Welfare is sponsoring a nutrition photograph contest. This contest is now open and will run until November 30th, 1953. Because of the relationship between nutrition and dental health it is possible that some dentists may be participating in a nutrition project which they would like to enter in this contest. Rules are obtainable from the Nutrition Division, Dept. National Health & Welfare, Ottawa.

● **C.D.A. PENSION-ASSURANCE PLAN.** The Pension-Assurance Plan hitherto available to members in nine provinces, but not the Province of Quebec, will now be available through special arrangements to the Members of the C.D.A. living in that Province. Enquiries should be addressed simply to—

Mr. E. L. R. Williamson,
Post Office Box 70,
Brockville, Ont.

● **UNIVERSITY OF TORONTO DENTAL ALUMNI ASSOCIATION** Annual Meeting Dinner and Dance, Friday, October 16, Homecoming week-end.

● The **SECOND INTERNATIONAL DENTAL CONGRESS** in Mexico City sponsored by the Mexican Dental Association, will be held Nov. 15-21, 1953.

UNIVERSITY OF TORONTO, FACULTY OF DENTISTRY CONTINUATION COURSES FOR GRADUATES IN DENTISTRY

PAEDODONTICS—November 23-25, 1953. 9.00 a.m.—5.00 p.m. Enrolment limit 12. Fee \$50.00.

DENTAL RADIOLOGY—November 30-December 4, 1953. 9.00 a.m.—5.00 p.m. Enrolment limit 12. Fee \$75.00.

PERIODONTICS—January 18-22, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 14. Fee \$75.00.

OPERATIVE DENTISTRY—February 15-19, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 10. Fee \$75.00.

ENDODONTICS—March 8-12, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 8. Fee \$75.00.

ORTHODONTICS (for the general practitioner)—April 5-9, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 10. Fee \$75.00.

PERIODONTICS—April 26-30, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 14. Fee \$75.00.

DENTAL ORAL SURGERY AND ANAESTHESIA—May 3-7, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 12. Fee \$75.00.

Please address inquiries to: The Dean, Faculty of Dentistry, University of Toronto, 230 College Street, Toronto 2-B, Ontario.

● **THE ACADEMY OF DENTISTRY, TORONTO** announces its opening Dinner on Monday, October 19th, 1953 at the Royal York Hotel, Toronto. Speaker: Mr. Frederick G. Gardiner, Chairman, Council of Metropolitan Toronto.

The annual Winter Clinic of the Academy will take place on Thursday, November 26th, also at the Royal York Hotel.

● **THE AMERICAN ACADEMY OF DENTAL MEDICINE** will hold its annual Mid-Winter Meeting and Luncheon at the Hotel Statler, New York City, on Sunday, December 6, 1953, 12:30 p.m.

From 2 p.m. to 5 p.m., following the Luncheon, there will be a symposium on **GERIATRICS**, discussed by Professor Alonzo F. Myers of New York University, Dr. Henry M. Goldman of Boston, and Dr. C. Ward Crampton of New York City, with Dr. Joseph I. Echikson of Newark, N.J., acting as moderator. For reservations and program address the National Secretary, Dr. William M. Greenhut, 124 East 84th Street, New York 28, N.Y.

● A one-day Workshop on "**OCCUPATIONAL ORAL-HEALTH IN GENERAL DENTISTRY AND PUBLIC HEALTH**," sponsored by the First District Dental Society of New York with the collaboration of the Postgraduate Medical School, Institute of Industrial Medicine, New York University, will be held on Friday, January 22, 1954, at the Hotel Statler, New York City.

Members of the health professions are cordially invited to attend all sessions. Admission is free. For registration forms write to Public Health Workshop, First District Dental Society, Hotel Statler, New York 1, N.Y.

● **THE ASSOCIATE COMMITTEE ON DENTAL RESEARCH** offers one Senior Dental Research Fellowship of an annual value from \$3000 to \$5000.

This award will be granted only to a Canadian citizen who has had several years postgraduate training and has demonstrated his capacity for independent investigation.

Address all correspondence to: The Awards Officer, National Research Council, Ottawa, Canada.



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Editorial

FLUORIDATION'S IRRESPONSIBLE OPPOSITION

"It is unfortunate that every advance in public health brings to light a group of crusaders who are determined to save the public from the imaginary dangers of the new public health procedure." These words of Dr. J. Roy Doty, Secretary of the Council on Dental Therapeutics of the American Dental Association, have had an unfortunate exemplification in a recent edition of a Canadian magazine, *New Liberty*. The lurid and spine-tingling title, "They May Be Risking Your Life," makes the tenor of the article immediately apparent. By complete disregard of scientifically established facts and the insinuation of apprehension and uncertainty into the minds of many people by implying that certain notions are in fact actualities, Alan T. Muir, the author, does a tremendous disservice to the readership the magazine alleges to serve.

The writer makes use of most of the familiar assertions which other opponents of fluoridation have employed—"compulsory mass medication—indications of aggravation to other ailments—not proved that 1.0 p.p.m. is harmless to everybody—thousands of people are hobbling around crippled because they swallowed too much fluorine—and so on *ad nauseum*. Fortunately, scientific information has a way of penetrating these barriers of confusion and misinformation, but the delays in adoption are often unfortunate *sequelae* to the publishing of such trivia.

About one year ago the same author prepared a previous anti-fluoridation composition in another publication. At that time the inference was apparent that because of the fluoridation experience of Brantford, more people were dying of arterial and heart diseases there than in other areas. Such a statement is completely fallacious, in fact, taking into account the age composition of the populace, Brantford's death rate from such diseases is less than Sarnia's where there is no fluoridation and no natural occurrence of fluorides. This particular reduction, of course, is in no way attributable to the fluoride.

It has become almost axiomatic, even to those opposed to fluoridation, that the overwhelming wealth of evidence indicates a caries attack reduction where fluorides are present as opposed to fluoride-free areas. Most of the discussion ensues because there are those who oppose fluoridation largely on the basis of the idea that the proponents should be willing to guarantee that no harmful effect, however insignificant, will ever result from this procedure. Dr. Doty asks the rhetorical question: Can anyone guarantee that any individual's most trivial activity may not sometime result in injury? Can any scientist, therefore, be honest and be willing to provide such a dogmatic guarantee? When millions of people for many years have used drinking water bearing 1 p.p.m. fluoride without any evidence of adverse effect, and when dozens of careful animal tests show that fluoride must be consumed at levels at least fifty to one hundred times this high before toxic effects (other than mottled teeth) can be detected, then the public can know that the statement, "There is no evidence that fluoride in water at 1 p.p.m. will have any undesirable effect" is an adequate assurance of safety.

It is not necessary here to refute in detail the misinformation and quasi-scientific inexactitudes presented. Suffice it to say that no public health measure has ever been supported with the abundance of written evidence than has this procedure of fluoridation. In fact almost 5,000 titles of scientific articles bearing on the physiological effects of fluorides appear in the list which was compiled at the Kettering Laboratory at the University of Cincinnati School of Medicine.

The evidence for fluoridation and the widespread support the measure has received from professional health organizations the world over, make one conjecture upon the actual reason behind the publishing of such erroneous material in a popular publication. Unquestionably articles of a contentious or controversial nature are more likely to be accepted by editorial directors because they appeal to the sensational tastes which many people seem to exhibit in their selection of reading matter in magazines. The presence of such material, it is reasoned, cannot help but enhance the sale of the magazine which contains it. The fact, in this instance, that the material is questionable and may contribute to the deprivation of a most desirable health measure to thousands of our young citizens appears inconsequential when considered against the possible stimulation of an increase in circulation.

If this conclusion, based upon the above premise, is incorrect and the magazine is acting only as a vehicle for scientific re-checking of the situation, the matter might be considered laudable. But when ill-founded speculations of a pseudo-scientific nature are presented, then the possible harm which can accrue to progress in the health field makes the article deplorable and contrary to the best interests of its readers.

CORRESPONDENCE

The Editor-in-Chief,
Journal of Canadian Dental Association,

Dear Sir,

My attention has been drawn to a news item under the heading "Australia—National Health Council Urges Fluoridation" which appeared in your Journal, Vol. 19, No. 5, page 273, 1953.

2. It is presumed that the National Health Council referred to in the item is meant to be the National Health and Medical Research Council whose functions, amongst other things is "to advise the Commonwealth and State Governments on matters of Public Health legislation and administration, and on any matters concerning health, medical and dental care and medical research".

3. At the Thirty-Third Session of the National Health and Medical Research Council held in May 1952 the following resolution was passed:—

**"FLUORIDATION OF DOMESTIC WATER
SUPPLIES.**

The Council, in view of the practice advocated by responsible American medical and dental authorities in respect of fluoridation of water as a factor in the control of dental caries, considers that the addition of fluoride to water supplies to be a reasonable and safe measure, provided the addition of this substance is carried out under strict supervision and scientific control to ensure that the percentage does not exceed accepted standards laid down by the State Health Departments.

The use of this substance as a means of self medication is strongly condemned."

4. It will be readily seen from this Resolution that the National Health and Medical Research Council has made no recommendation to the Commonwealth Government that the addition of fluoride to Australia's water supplies should be made compulsory.

Yours faithfully,

A. J. METCALFE

*Chairman,
National Health & Medical Research
Council.*

The news item on Fluoridation was copied from an article which appeared in Dental Magazine and Oral Topics and according to this Journal it was received from its Australian correspondent. It is regretted that the item was not true to fact.—Ed.

ROYAL CANADIAN DENTAL CORPS NEWS

1. The names of the following officers of the 1st Divisional Dental Coy. C.A.S.F. were engraved on the "Trelford Trophy", the presentation of which was reported in the August issue.

Capt. E. T. Bourke, Capt. W. C. Dowell, Major I. W. Hamilton, Capt. J. P. Lantier, Capt. J. A. Milne, Capt. N. W. Snider, Capt. R. W. Bradley, Capt. G. Franklin, Capt. W. G. Joynt, Capt. H. R. McLaren, Capt. F. S. Radway, Capt. C. L. Strachan, Capt. R. C. Cullington, Capt. E. E. Groff, Capt. R. S. Langstroth, Capt. L. F. McRae, Capt. J. O. Shaunessy, Capt. J. S. Wilkinson.

Deceased

Capt. W. E. Delaney, Capt. H. O. Harding.

2. Major T. L. Marsh, of Ottawa, has been promoted to the rank of Lieutenant-Colonel and appointed Dental Public Health Officer on the staff of the D.G.D.S.

Lieut.-Col. Marsh was born in England in 1908. He was educated at University of Toronto Schools and the University of Toronto, graduating in 1932. He practised in Toronto from graduation until joining the Canadian Army in 1942.

Lieut.-Col. Marsh served in Canada and the United Kingdom returning to Ottawa in 1946, when he served as an instructor at the R.C.D.C. School.

In 1949, he attended the first post-war course in Advanced Dentistry at the U.S.

Army Medical-Dental Research and Graduate School in Washington.

In 1951, he attended the University of Toronto and was granted a Diploma in Dental Public Health in June 1952, at which time he returned to Ottawa on the staff of the D.G.D.S.

Lieut.-Col. Marsh is married and has three children.

3. Captain M. C. Cole has been promoted to the rank of Major.

Major Cole, 27, was born in Peterborough, Ont., and received his early education in Port Hope. He graduated from the University of Toronto in 1949, and practised in Port Hope prior to his appointment as Captain in January 1950.

Major Cole served in Ontario prior to proceeding to his current appointment with 27 Cdn. Fd. Dental Unit.

He is married and has two children.

4. Lieut.-Col. F. J. MacLean, O.C. No. 11 Coy. R.C.D.C., Edmonton, represented the Director General of Dental Services at the Western Canada Dental Society Meeting at Jasper Park Lodge from June 14th to June 18th, 1953.

Lieut.-Col. H. L. Harris, O.C. No. 12 Coy. R.C.D.C., Halifax, represented the Director General of Dental Services at the Maritime Dental Association Meeting at Keltic Lodge from Sept. 3rd to Sept. 5th, 1953.

NEWS FROM THE PROVINCES

BRITISH COLUMBIA

In order to provide information and enthusiasm in the province regarding fluoridation, and to encourage local communities to fluoridate their respective water supplies, the **Division of Preventive Dentistry** of the B. C. Department of Health have sent out to the field staff and to other key officials in the province successive copies of material entitled "Fluoridation News." These articles contain all the latest scientific information on the subject.

Dr. Frank McCombie, the Director, is to be congratulated on his efforts to bring about fluoridation in B.C., which our dental organizations have endorsed.

After practising in New Westminster for 41 years, Dr. Emery Jones has retired from active practice to assume the position of Registrar-Treasurer of the **B.C. College of Dental Surgeons** with headquarters in the Vancouver office. Dr. Harold M. Cline is the new President of the College.

The **Fraser Valley Dental Society** held its first monthly meeting of the new season on September 10th in Chilliwack. The clinician was Dr. Paul Rondeau of Vancouver, who recently completed a course in oral surgery at the University of Toronto. He lectured on some aspects of oral surgery and newer hospital procedures, accompanied by pictures of actual operations.

The **Dental Health Division** of the Metropolitan Health Committee of **Greater Vancouver** (comprising half a million people) under its director, Dr. J. A. Sampson, has expanded its services, and there are now twenty-one fully-equipped permanent school clinics located strategically with reference to school population and transportation, with a dentist and assistant in each centre.

Working in close co-operation with medical health officers, public health nurses and nutritionists, the Division provides a service consisting of routine operative procedures as well as parent and patient education in prevention.

Staff meetings are held monthly when matters of pertinent interest are dis-

cussed. In addition demonstration clinics for member of the staff are held, and in this field the Vancouver Pedodontia Study Club has played an important role by assisting in the maintenance of high standards of treatment.

D.H.M.

QUEBEC

The Office of the President of the **Montreal Endodontia Society** announces the following program to date for the coming season 1953 - 1954.

September: Report of Philadelphia International Conference on Endodontics.
November: Practical Demonstration, Filling technique of anterior and posterior teeth.

January: Discussion of Problem Cases.

February: Focal Infections.

March: Symposium on Endodontics.

April: Dr. Ralph Sommer - Full Day Clinic on Endodontics.

R. F. H.

ONTARIO

Dr. and Mrs. John A. Sherman of Toronto have announced creation of an **Undergraduate Scholarship in Dentistry** at the Hebrew University in Jerusalem, commemorating their recent twenty-fifth wedding anniversary.

The School of Dentistry is to be opened this winter for fifteen first year students and the Sherman scholarship is the first to be created in this field of study.

Dr. Sherman is the Canadian Chairman of the Alpha Omega Fraternity's effort to establish a capital fund for building the School in Jerusalem.

Israel's practising dentists number 900 and their average age is 52.

The **Lambton County Dental Society** held its annual golf tournament recently, and dentists journeyed from Toronto, Windsor, St. Thomas, London, Sandusky, and Port Huron to compete for the new trophy and many valuable prizes. Dr. C. A. Kelly of Sandusky, Michigan, won top honours with a low gross of 79. Dr. George Milne and Dr. Wes. Moore of Sarnia shot a 79 and 81 respectively. The tournament was under the general direction of Dr. Lorne Bunton.

A negro preacher concluded his sermon on Wisdom with the following: "It ain't the things you don't know what gets you into trouble, it's the things you know for sure what ain't so".—Charles F. Kettering in Scientific American.

IN MEMORIAM

Wendell Thomas Holmes—Dr. Wendell Thomas Holmes passed away suddenly in his sleep August 26th, 1953. He was 60 years of age.

Dr. Holmes was born at Mono Mills, near Orangeville, Ontario, and received his early education in the Orangeville Schools. He graduated from the Royal College of Dental Surgeons of Ontario in 1920 and has practised in Toronto ever since.

Dr. Holmes was an outstanding athlete having played football with Toronto Argonauts and the University of Toronto. He was a noted lacrosse player with the Young Toronto and St. Simon's teams. For many years he was Treasurer of the Ontario Amateur Lacrosse Association. He was an Honourary Life Member of that organization.

He was an Associate in Clinical Dentistry, of the Faculty of Dentistry, University of Toronto, a Member of Xi Psi Phi Fraternity, Weston Golf Club and Ontario Golf Association.

He was a member of the Anglican Church.

Dr. Holmes was predeceased by his wife, Marjorie Wells and is survived by his son, William Wendell, and daughters Helen and Marjorie.

Thomas Henry Lewis: Dr. Thomas Henry Lewis, passed away on Friday, August 21st, 1953, in Simcoe, Ontario, following a short illness, in his 92nd year.

Dr. Lewis was born in Ragland, Monmouthshire, England, and received his L.D.S. degree at Birmingham. At 21 he came to Canada and took up residence at Jarvis and practised his profession there for more than 50 years. Upon his retirement 13 years ago he moved to Simcoe.

Dr. Lewis was a member of Trinity Anglican Church in Simcoe and was formerly active in Saint Paul's Anglican Church at Jarvis, where he was church warden for more than 30 year and also served at lay delegate to Niagara Synod. He was a member of the Jarvis Village Council for several years and also a member of the board of education. A past master of King Solomon Lodge, A.F. and A.M., Jarvis, he was the possessor of a 50-year jewel.

His wife, the former Hannah Robinson, whom he married at Jarvis 69 years.

ago, predeceased him eleven years ago. Surviving are three daughters, Mrs. Dawson F. Aiken of Simcoe, Miss Grace Lewis at home and Mrs. Alfred Terry, of Hamilton.

Isaac Lazarus Hamill, Dr. Isaac Lazarus Hamill of Toronto, died on Monday, September 7th, 1953. He was 60 years of age.

Dr. Hamill was born in Russia, moved to Canada and received his early education in Toronto. He graduated from the Royal College of Dental Surgeons in 1920 and practised in Toronto from that time.

Dr. Hamill was a member of the Mount Sinai Dental Society and Histrut, as well as the founder of the Jewish Public Library, in which capacity he served as treasurer. He was a member of Holy Blossom Temple in Toronto.

Dr. Hamill is survived by his wife, Bessie Lavine Hamill, two daughters, Mrs. Louis Herman and Mrs. M. Fremes, a brother Harry Stein and two sisters, Mrs. Rose Schwartz and Mrs. Libby Rosenthal.

George Wesley Everett, Dr. George Wesley Everett, formerly of Hamilton Ontario, but late of R.R. 1, Waterdown, Ontario, died on August 27th, 1953. He was 73 years of age. Dr. Everett was born in Waterdown and graduated from the Royal College of Dental Surgeons in 1903, and conducted his practice, confined to the specialty of exodontics, in Hamilton. He was an Honorary Member of R.C.D.S., Ontario, an Honorary Life Member of the Hamilton Dental Association, a Member of the Academy International of Medicine and Dentistry and St. John's Lodge. He was also a Thirty-second Degree Mason of the Scottish Rite and an active member of First United Church in Hamilton.

Dr. Everett was noted for his interest in the breeding of Guernsey Cattle. He was a member of Wentworth Guernsey Breeders' Association and in 1939 was the owner of the grand Canadian Champion Guernsey.

Dr. Everett is survived by his wife the former Ethel Graham Balfour; son, Alan, of Waterdown, a daughter, Mrs.

S. P. Clark, of Waterdown; three grandchildren and one brother, John, in Portland, Oregon.

Elmer James Hill—Dr. Elmer James Hill, 54, died July 26th in Vancouver where he had lived since leaving Moose Jaw, Sask.

Dr. Hill was born in Palmerston, Ontario and was a graduate of McGill University, from whence he came to Moose Jaw in 1925 to practice. He later removed his office to Vancouver.

He was a member of St. George Lodge, A.F., and A.M., Moose Jaw. He was an active member and director of the Vancouver Marine Drive Golf Club.

He is survived by his widow and a daughter Marilyn June.

Charles Moffat Ross, Dr. Charles Moffat Ross of Hamilton Ontario, died on September 4th, 1953 at the age of 77.

He received his early education at Caroline St. Collegiate, Hamilton and graduated from the Royal College of Dental Surgeons of Ontario in 1900. He practised in Hamilton up until his retirement about two years ago.

Dr. Ross was an Honorary Member of the Royal College of Dental Surgeons of Ontario and was a member of the United Church of Canada.

Dr. Ross was predeceased by his wife, Lillian Hurrell and is survived by his son, Professor Alan Charles Moffat Ross, of Toronto.

George Armond Sirrs — Dr. George Armond Sirrs, 58, of Newtonbrook, Ontario, died on August 21st. He was born in Bruce County, Ontario, and after his elementary education he graduated from R.C.D.S., Ontario, in 1919. Dr. Sirrs practised in Toronto from graduation until 1946 when he moved to Acton and in January of this year discontinued practice to become director of Rehabilitation of Shadowbrook Health Foundation.

He was a member of the Council of the Academy of Dentistry, Toronto, for two years and in 1940 was a member of the Dental Advisory Committee of the Province of Ontario.

Dr. Sirrs served in the first World War with the Canadian Army Service Corps, returning to Canada with the Canadian Dental Corps.

He was a member of the United Church of Canada, the Masonic Order, Thornhill Golf and County Club, and the Toronto Board of Trade.

Dr. Sirrs is survived by his wife, Doris, one daughter, Mary and one son, Hewitt.

Donald Alexander MacLeod: Dr. Alexander MacLeod passed away suddenly in Baddeck, N.S. recently. He had recently given up his practice in Tatamagouche because of ill health and had moved with his family to Baddeck. A graduate of the University of Toronto, he practised in various parts of Cape Breton and Nova Scotia. Interested in all community activities he was at one time president of the Cape Breton County Home and School Council.

Besides his wife he is survived by one daughter, Annette and one son Jack.

DIRECTORY

Canadian Dental Association Headquarters—234 St. George Street, Toronto, Ontario.

Matters relating to the publication of manuscripts or news items for the English Section of the Journal should be addressed to the Editor-in-Chief, Dr. Wesley J. Dunn, 234 St. George Street, Toronto, Ont.

Matters relating to the French Section of the Journal should be addressed to the French Editor, Dr. G. de Montigny, 400 est Blvd. St. Joseph, Montreal, P.Q.

Matters relating to the business of the Journal should be addressed to the Business Manager, Dr. Don W. Gullett, 234 St. George Street, Toronto, Ontario.

Subscription Price of Journal in Canada, Great Britain, the United States and all other countries, \$3.00 per year.

All additions and changes of address should be sent to Dr. Gullett before the 20th of the month, to become effective the following month.

Matters relating to advertising should be addressed to the Advertising Representative, Mr. W. Edgar Read, Consolidated Press, 73 Richmond Street W., Toronto, Ontario.

Canadian Dental Association Pension Assurance Plan—P.O. Box No. 70, Brockville, Canada.

Le Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

VOLUME 19

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No 10

La dentisterie préventive chez les enfants et ses rapports avec l'alimentation

par CLAUDE LORTIE, B.A., D.D.S., Montréal

La carie dentaire n'est pas une maladie inhérente à tous les êtres humains ni même à l'espèce humaine, comme certaines maladies se manifestant en tous temps et en tous lieux, telles le rhumatisme, la tuberculose, le cancer. C'est une affection acquise par l'Humanité, mais de caractère différent des maladies infectieuses: la rougeole, la syphilis, etc. C'est pourquoi un nombre incalculable de recherches ont été faites et se poursuivent encore de nos jours sur les causes de la carie dentaire.

Son aspect biochimique a été traité sous différents angles: analyse de la salive, du sang et des dents; leur contenu en calcium, phosphore, CO₂, en fluor et en matières organiques. Tous ces travaux ont été poursuivis dans le but de chercher si les éléments, plus haut mentionnés, contenus dans ces trois tissus, pouvaient avoir une relation quelconque avec la carie des dents.

Son aspect bactériologique a rencontré des partisans enthousiastes dans plusieurs pays, notamment en Allemagne et en Amérique; aux Etats-Unis, c'est à Ann Arbor que Bunting a repris la vieille théorie de Miller (1). Ce dernier a prétendu, à la fin du siècle dernier, que la carie était due à l'acidité produite par certains micro-organismes, contenus dans la salive, au contact des hydrocarbonés.

Les bactériologistes considèrent cependant comme acquis que ces micro-organismes sont, soit des lactobacilles, soit des streptocoques hémolytiques; alors que certains croient même à la transformation possible du bacillus acidophilus en streptocoques, ou inversement, qui attaqueraient la substance inorganique. Gottlieb (2), peu de temps avant sa mort, faisait jouer un rôle prépondérant aux staphylocoques dorés, nécrosant les parties organiques des tissus dentaires et se manifestant par la production d'un pigment jaune que l'on peut trouver à n'importe quel stage de la carie dentaire.

Les uns et les autres de ces micro-organismes coopéreraient donc, en quelque sorte, à l'effondrement de l'édifice dentaire, les uns décomposant les matières organiques, les autres désintégrant les matières inorganiques.

Enfin, la cause principale de la carie, d'après plusieurs auteurs, serait due au manque de calcification des dents et elle aurait pour cause un métabolisme anormal ou une mauvaise alimentation. Il est reconnu en effet, depuis très longtemps, qu'une dent bien calcifiée résiste davantage à la carie dentaire.

I—L'alimentation influe sur l'état dentaire

Personne aujourd'hui ne met en doute la croyance qu'une diète adéquate et nu-

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tritive est le principe fondamental pour la formation de dents saines; de tissus périodentaires et de support osseux capable de pourvoir l'espace nécessaire aux dents permanentes, rendant ainsi l'occlusion la plus normale possible.

En accord avec Kronfeld (3) et Hogeboom (4) les couronnes des dents temporaires commencent à se calcifier vers le cinquième ou sixième mois "in utero," et les dents permanentes commencent à se calcifier par intervalles après la naissance, de telle façon, qu'à l'âge de trois ans, la calcification est commencée dans toutes les dents sauf les troisièmes molaires. Les couronnes des dents permanentes, sauf les troisièmes molaires, sont pratiquement formées vers l'âge de sept ans. Que quelqu'un croit en l'importance primordiale de la calcification pour la prévention de la carie, c'est seulement le bon sens qu'une bonne structure saine est importante pour la longue vie de tout objet. Comme les dents doivent avoir une bonne structure saine, elles doivent recevoir pour leur édification, les matériaux nécessaires; ces matériaux sont apportés par une diète adéquate. Nous devons donc admettre qu'une diète bien balancée, à la femme enceinte, est de nature à procurer à son futur enfant, une dentition forte et solide, qui résistera davantage à la carie dentaire. Nous devons admettre aussi que, comme toutes les dents continuent à se former après la naissance, c'est pendant cette période que la diète a le plus d'influence sur la calcification des dents.

Tous les auteurs reconnaissent que la calcification joue un grand rôle dans le phénomène de la carie dentaire. Il ne faut pas, cependant, demander à la nutrition plus qu'elle ne peut donner, car de nombreux facteurs peuvent influencer la calcification, tels que les maladies à haute température et les troubles endocriniens.

A—Troubles qui entravent la calcification

Les maladies à haute température, telles que la pneumonie, la scarlatine et la rougeole, causent une perturbation sanguine qui a pour effet de diminuer et même d'arrêter la calcification des os et des dents, durant la maladie de l'enfant. Et

très souvent, ces maladies laissent leurs traces sur les couronnes des dents, alors que l'os n'est nullement affecté. Vous avez tous fait connaissance avec la dent hypoplastique, cette dent mal calcifiée à un certain endroit et formant un sillon plus ou moins horizontal, se continuant sur les dents adjacentes, surtout les incisives permanentes (5).

Les troubles endocriniens, surtout ceux de la thyroïde et de la parathyroïde, peuvent influencer la calcification. Voici les trois principes de base, tels qu'énoncées par Engelbach (6) sur les troubles endocriniens:

1.—Un manque de la fonction thyroïdienne produit un retardement dans la différenciation embryonnaire et le développement post-natal de tous les centres osseux, incluant aussi les germes dentaires;

2.—Une hormone du lobe antérieur de la glande pituitaire est l'hormone générale de la croissance. Ainsi, une surproduction de celle-ci produit une croissance accrue qui se manifeste par une augmentation de poids et de taille. Une sous-production de cette hormone de la croissance a un résultat contraire, i.e. développement amoindri et petite taille, en incluant encore les dents. En d'autres mots, chacun des organes du corps est réduit en grandeur, y compris les dents.

3.—La fonction des glandes sexuelles est de régler la fermeture ou la fusion des épiphyses et aussi d'influencer le métabolisme du calcium, de là leur importance.

S'il y a surproduction de ces glandes, il y a fermeture prématurée des épiphyses entravant ainsi la croissance des os longs, de ceci résulte une petite stature. Une déficience de ces glandes produit une fusion retardée des épiphyses, résultant en une croissance démesurée des os longs causant une grande stature hors de l'ordinaire. Il est évident qu'une telle modification anormale dans le métabolisme du calcium se reflétera dans la calcification des dents.

Ainsi donc, au stage de sa formation, la dent est très sensible aux troubles or-

ganiques; les maladies à haute température, l'hyper ou l'hypofonction des glandes endocrines peuvent causer une diminution souvent très marquée dans la calcification de l'émail et de la dentine; anomalie, qui rend la dent plus susceptible à la carie, après son éruption sur la gencive.

Après l'éruption d'une dent qui a un défaut dans sa calcification, l'organisme peut-il avec une diète adéquate réparer ce défaut de décalcification?

B—Peut-il y avoir calcification secondaire après l'éruption des dents?

L'étude de l'histologie dentaire nous a démontré que les adamantoblastes ou améloblastes sont placées de telle sorte dans les gencives, que l'éruption de chaque dent a pour effet de les faire disparaître. Le fait que l'émail d'une dent qui a fini son éruption n'a aucun contact direct avec des tissus vivants, comme les vaisseaux sanguins et les nerfs, nous porte à croire que ce tissu n'a pas de vie (7). Ce phénomène fait dire à Isaac Schour (8) qu'après l'éruption d'une dent, les adamantoblastes étant disparues et le tissu dépourvu de canaux vasculaires, l'émail ne peut subir de calcification ou de décalcification secondaire. Sa valeur en sels minéraux restera la même, sa vie durant, quelques changements que puisse subir l'organisme durant ce même laps de temps.

L'émail ne peut subir de calcification secondaire après l'éruption des dents. Les adamantoblastes sont les cellules productrices de l'émail mais, lors de l'éruption des dents, les adamantoblastes disparaissent; il ne peut donc y avoir de calcification secondaire de cette façon. Une diète adéquate ne peut non plus provoquer la calcification secondaire. En effet, Gies et Heft (9) l'ont prouvé en donnant une injection intrapéritonéale de jus de thypan à des rats, des lapins et à des chiens; ils ont constaté que cette substance se rendait facilement jusqu'à l'émail des dents en voie de formation et semblait y demeurer indéfiniment, mais, ne pénétrait pas jusqu'à l'émail des dents déjà formées. Cette expérience rend nulle la thérapéu-

tique du calcium pour stimuler la calcification, lorsque les dents ont déjà fait leur éruption sur la gencive.

L'émail ne peut subir de décalcification secondaire après l'éruption des dents et un seul exemple suffira pour le prouver. En 1934, Charles C. Thomas (10), fit une étude histologique des dents d'un enfant de 15 ans qui avait souffert d'une tumeur de la parathyroïde; il nota une résorption très prononcée de calcium dans les os de la mâchoire mais aucun signe de décalcification dans les dents et il conclut: "The teeth do not take part in the generalized decalcification. They may fall out on account of the disease of the jaws, but they themselves remain well calcified."

Il en est de même pour un individu, dont toutes les dents ont déjà fait leur éruption, et qui n'a pas de diète adéquate. Il n'y aura jamais de décalcification secondaire parce que l'émail et la dentine étant dépourvus de canaux vasculaires, ne sont pas des réservoirs de calcium et ne peuvent subir de changement. Schour (11) l'affirme: "Enamel and dentin are not subject to calcium withdrawal." Cependant, personne ne met en doute la calcification secondaire de la dentine. En effet, les odontoblastes continuent leur travail, après l'éruption de la dent. Leur activité est moindre, mais cependant réelle. La dentine est continuellement en contact avec la circulation sanguine et elle serait sujette à la récalcification.

Nous pouvons conclure d'après les expériences qui ont été faites qu'après son éruption sur la gencive, la couronne de la dent (i.e. émail et dentine) semble devenir très peu sensible à l'absorption et à la résorption des sels minéraux. C'est la raison pour laquelle, plusieurs auteurs prétendent que la diète a très peu d'effets contre la carie dentaire chez l'adulte; mais que la diète a une très grande importance et beaucoup d'effets pour prévenir la carie dentaire, lorsque les dents sont dans leur période de formation, parce que la diète apporte les matériaux nécessaires à l'édification de dents saines et bien constituées.

II—Facteurs alimentaires et nutritionnels intervenant sur la calcification

La dent possède une haute structure inorganique; l'émail bien formé contient environ 85% de sels minéraux; la dentine et le ciment approximativement 61% (12). Or, il ne se fait pas de création dans le phénomène de l'absorption intestinale, il y a transformation de la matière absorbée, sans en changer la nature. Il est reconnu depuis longtemps qu'il ne suffit pas de manger à sa faim pour satisfaire à tous les besoins du corps humain; il faut, de plus, que la nourriture contienne tous les matériaux nécessaires à la formation et à la régénération de chacun des tissus en particulier. De même qu'il faut de la brique pour briqueter une maison, ainsi les sels minéraux sont indispensables à la formation des dents.

Tous les matériaux nécessaires à une bonne diète intéressent le dentiste. Tous les nutritionnistes vous diront que, même en ce qui concerne la calcification osseuse ou dentaire, le meilleur moyen d'obtenir de bons résultats, c'est par une diète bien balancée. Tous les éléments nécessaires au métabolisme du corps humain s'entraident les uns les autres; les gras sont les véhicules des vitamines A, D, E et K; le calcium coordonne les autres sels minéraux dans l'organisme, etc.

Les éléments nutritifs sont: 1) les éléments dits énergétiques (les protéines, les gras et les hydrocarbonés); 2) les sels minéraux; 3) les vitamines.

1—Les éléments dits énergétiques

LES PROTEINES—Les protéines sont nécessaires pour construire, réparer et maintenir les tissus (protéines endogènes), aussi bien que pour fournir l'énergie à l'organisme (protéines exogènes). L'importance des protéines pour le métabolisme des minéraux doit être aussi mentionnée. En effet, les protéines sont nécessaires pour la rétention et l'emmagasinement des minéraux. Nous trouvons des minéraux en abondance dans les muscles, les organes glandulaires, le sang et dans l'os et la dent auxquels les protéines fournissent la matrice nécessaire pour la calcification.

Dans les recherches qui ont été poursuivies dans le domaine des protéines, on peut noter que l'ingestion de protéines dans la diète augmente le pouvoir tampon de la salive et ceci, de la façon suivante: c'est que les protéines neutraliseraient l'acide formé dans les plaques dentaires (13). Dale a fait des recherches sur certaines protéines qui, une fois ingérées et ensuite secrétées dans la salive, entraveraient le travail des enzymes salivaires ou des bactéries qui sont concernées dans le processus de la carie. Une telle prétention a été basée sur la facilité qu'a le tryptophane ingéré d'entraver le travail de l'amylase salivaire et ainsi de limiter la carie dentaire (14). De plus, Karshan, Weiner et Stofsky ont noté que la quantité de protéines, contenues dans la salive, ne serait pas la même où il y a des dents cariées ou des dents saines: 0.27% dans le premier cas et 0.37% environ dans le dernier (15).

Roseberry, Karshan et Foley (16), après avoir provoqué une décalcification prononcée, sur des rats, en leur donnant seulement du riz comme nourriture, ont, entre autres expériences, ajouté une quantité égale de protéines et de sels à leur diète; alors, ils ont constaté un changement appréciable dans la structure des dents.

LES GRAS — Leur première fonction est de produire de la chaleur et de l'énergie, leur fonction secondaire de construire et de réparer les tissus. Ils sont, de plus, les véhicules nécessaires des vitamines A, D, E et K.

Leurs rapports avec la carie ont été étudiés sous différents angles mais ils ont à peu près tous été négatifs. Par contre, des études récentes ont démontré que la présence de graisses et d'huiles dans la diète a réduit l'incidence de la carie. L'adhésion à cette perspective a été établie dans des expériences que l'on a faites sur des rats (17), (18). Ces agents auraient leurs effets soit parce qu'ils hâteraient l'élimination des hydrocarbonés dans la bouche, soit parce qu'ils exerceraient une influence défavorable sur la facilité des organismes de la bouche d'utiliser les

hydrocarbonés pour la marche de leur métabolisme propre.

LES HYDROCARBONES — Ils sont la source la plus économique d'énergie. Ils sont, après les protéines, requis pour construire et réparer les tissus. Ils ont de plus un rôle néfaste à jouer dans la carie des dents.

Les sucres commencent à effectuer leur rôle néfaste dans la carie dentaire avant même que les dents ne fassent leur éruption. Récemment, Sognaes (19) a présenté des données expérimentales qui, si elles sont confirmées, indiquent que l'ingestion de sucres raffinés par la mère enceinte augmenterait la susceptibilité à la carie chez le fœtus dont les dents sont en train de se calcifier. D'après ces données, Sognaes suggère que l'ingestion de sucres par la mère durant l'allaitement augmenterait ultérieurement l'incidence de la carie des dents des enfants, lorsque celles-ci feront leur éruption.

Probablement, comme la déficience de la vitamine D, l'ingestion de sucre durant la grossesse et pendant l'allaitement modifierait la nature physique des dents de telle façon qu'elles seraient plus susceptibles à la retention des hydrocarbonés ou à la pénétration des bactéries. C'est ainsi que Sognaes a interprété la réduction de la susceptibilité à la carie chez les enfants d'Europe, durant la Deuxième Grande Guerre, comme due, du moins en partie, à ce phénomène.

Dorothea F. Radusch semble appuyer les dires de Sognaes lorsqu'elle dit que les céréales, qui contiennent beaucoup de glucides, possèdent des propriétés anticalcifiantes qui sont plus fortes, lorsque la vitamine D est à la baisse dans la diète (20).

Les sucres continuent, encore plus activement, leur rôle néfaste sur les dents, lorsque celles-ci font leur éruption: c'est la carie qui en résulte.

Afin de comprendre comment se produisent les caries, nous devrons tout d'abord énumérer les facteurs connus de la carie, et ensuite considérer l'action de ces facteurs, comment ils s'influencent les uns les autres dans le processus de la carie.

La carie est une décomposition chimique des tissus dentaires causée par des acides qui sont formés dans la bouche par la dissolution de particules d'aliments; ceci est accepté par plusieurs chercheurs dont Miller, Black et Williams (21). Quelle serait alors la nature de ces débris d'aliments? Philip Pfaff a déjà dit que: "remains of food which undergo putrefaction between the teeth occasion decay of the teeth." Le terme putréfaction, lorsqu'il s'agit de carie, est hors de cause et en voici la raison. La putréfaction signifie la décomposition des protéines et il est difficile de croire qu'une protéine puisse se convertir en acide.

Cependant, les glucides sont facilement convertis en acide par le processus de la fermentation. Ce processus chimique a été très bien expliqué par Kirk (22). Prenons tout d'abord la transformation de la canne à sucre en acide lactique:

$C_{12}H_{22}O_{11}$ (canne à sucre) et H_2O s'hydrolyse sous l'action de l'invertase en $C_{12}H_{24}O_{12} = 2 C_6H_{12}O_6$ (glucose) qui, sous l'action enzymatique des lactobacilles, est transformé en $4 C_3H_5O_3$ (acide lactique).

Prenons maintenant le cas de l'amidon:

$C_{12}H_{20}O_{10}$ et $2 H_2O$ s'hydrolyse sous l'action de la ptyaline en $C_{12}H_{24}O_{12} = 2 C_6H_{12}O_6$ (glucose) qui, sous l'action des lactobacilles est transformé en $4 C_3H_5O_3$ (acide lactique).

Cet acide lactique est produit en assez grande quantité, par la fermentation des sucres, pour dissoudre la structure de la dent dont l'émail est composé d'hydroxyapatite. Cet acide peut même décalcifier toute dent sans égard à sa composition et à sa structure (23).

Nous avons dit, plus haut, que le glucose se transformait en acide lactique sous l'action des bactéries; c'est une confirmation à la théorie de Miller (24). S'il n'y avait pas de glucose dans la diète, il n'y aurait pas de lactobacilles dans la salive, car les sucres sont les éléments de base à la survie de ces bactéries. En effet, il y a une relation directe entre le nombre de lactobacilles de la salive et la quantité de sucre ingéré; ainsi une augmentation de sucres amènera une multiplication accrue des bactéries.

La fermentation des sucres par les bactéries aboutit à la production d'acide lactique qui décompose la mucine de la salive et la transforme en une substance adhérente qui enrobe les colonies de lactobacilles et les débris d'hydrocarbures et les cimente sur une surface de la dent. C'est ce que nous appelons la plaque qui, lorsqu'elle est bien fixée à la dent, peut être considérée comme la cause initiale de la carie dentaire. Or, comme cette plaque est formée de bactéries, de mucine et de débris hydrocarbonés, nous pouvons conclure que les sucres sont impliqués dans une grande part comme étant responsables de la carie.

C'est alors que plusieurs chercheurs, dont Hockett (25), ont essayé de trouver les moyens d'atténuer cette formation d'acide par les micro-organismes. En voici quelques-uns:

- a) réduire la concentration des sucres fermentables qui viennent en contact avec les surfaces des dents;
- b) réduire la quantité de sucres fermentables qui viennent en contact avec les surfaces des dents;
- c) réduire la durée des contacts des surfaces de la dent avec les sucres fermentables;
- d) remplacer les sucres qui fermentent rapidement par d'autres qui fermentent lentement;
- e) prévenir la fermentation des bactéries dans la bouche en s'attaquant à leur existence:
 - 1.—soit en introduisant un agent qui empêche leur existence;
 - 2.—soit en otant certains agents nécessaires à leur existence;
- f) se servir d'un inhibiteur pour prévenir la formation d'acide par les micro-organismes;
- g) neutraliser l'acide avant qu'il puisse être actif:
 - 1.—soit par une certaine hygiène buccale;
 - 2.—soit en modifiant la salive dans son pouvoir tampon, comme nous l'avons vu plus haut avec les protéines et comme nous le verrons avec le calcium.

2—Les sels minéraux

Tous les minéraux, qui composent le corps humain, excepté le calcium, le phosphore, le fer et l'iode sont contenus en grande quantité dans les aliments; il n'est pas nécessaire d'y apporter une attention particulière dans la diète quotidienne. Comme le fer et l'iode n'ont qu'une relation secondaire avec la calcification des dents, les deux principaux sels: le calcium et le phosphore seront étudiés.

LE CALCIUM—LE PHOSPHORE—

Le calcium joue plusieurs rôles essentiels dans le métabolisme du corps, rôles, que nous résumerons ainsi:

- a) règle la perméabilité des membranes biologiques;
- b) joue un rôle dans l'automatisme cardiaque;
- c) contrôle l'excitabilité musculaire;
- d) entre dans la constitution des os et des dents;
- e) élément essentiel à la coagulation du sang;
- f) coordonne les autres sels minéraux dans l'organisme;
- g) élément important dans la composition du lait, lequel est la principale source de calcium alimentaire.

En plus, des fonctions du calcium, le phosphore possède les propriétés suivantes:

- a) il forme une partie intégrale de la structure nucléaire de chaque cellule et est intimement relié à leur multiplication;
- b) il est l'élément inorganique le plus largement distribué du corps humain.

C'est une question bien controversée et, en tout cas, bien confuse que celle des relations du calcium et du phosphore avec la carie. Nous nous efforcerons là encore de rester strictement sur le terrain des faits, observations et expériences.

Aucun document ne permet d'affirmer avec certitude qu'une ration déficiente en calcium et en phosphore prédispose à la carie. Nous l'avons bien vu, pendant les années d'occupation durant lesquelles, malgré le régime carencé en calcium, nous avons observé chez les enfants d'Europe

une régression du taux lésionnel; il ne faut pas oublier aussi que l'ingestion des glucides était diminuée. Tout laisse à penser, cependant, que la constitution du régime en sels minéraux influe sur la composition de la dent en formation.

Nous avons tous admis qu'une dent bien calcifiée résiste davantage à la carie. Comme elle est composée presque exclusivement de tissu dur, il est logique de conclure que le calcium est très important, surtout durant la période de formation des dents. Or, nous savons que la calcification dentaire débute avant que l'enfant naisse et qu'elle se continue après sa naissance jusqu'à l'adolescence. Il est très important que l'enfant absorbe, durant ces trois périodes de la vie, une très grande quantité de sels minéraux.

Etudions quelque peu l'importance du calcium à chacune de ces périodes. Est-ce que le fait de prescrire du calcium à une femme enceinte peut donner de meilleures dents à son enfant?

L'exigence en calcium, chez la femme enceinte, est très grande car, en plus de son besoin quotidien, elle doit pourvoir à la formation osseuse du fœtus; il y a danger de déficience dans son cas mais, d'après plusieurs auteurs, ce déficit affecte beaucoup plus la mère que le fœtus.

La quantité de calcium dans le sang demeure toujours constante et elle diminuera ainsi, aussi longtemps que la réserve dans les os n'aura pas été épuisée par des troubles endocriniens, surtout celui de la parathyroïde ou encore par une avitaminose D; nous en parlerons un peu plus loin.

Le fœtus reçoit donc, dans tous les cas normaux, sa quantité requise, même s'il doit puiser dans la réserve maternelle. Des troubles sérieux apparaîtront chez cette dernière avant qu'ils n'affectent l'enfant.

Il semble prouvé, en tout cas, que lorsqu'une femme a une diète appropriée à son état, le fait de lui prescrire du calcium en comprimés ou autrement ne peut avoir aucun effet additionnel sur la calcification des dents de son enfant.

Le bébé, qui se nourrit presque exclusive-

ment de lait, reçoit, pendant la période d'allaitement, la quantité de calcium requise par sa croissance. Le danger en déficit commence à se manifester et augmentera à mesure que l'enfant diminuera le lait pour une nourriture plus variée. C'est alors surtout, qu'il devient très important de voir à ce qu'il reçoive la quantité de calcium requise; ceci, non seulement pendant quelques mois ou quelques années, mais, durant toute son enfance et même son adolescence.

Lorsqu'une dent a terminé sa calcification, le fait de donner du calcium et du phosphore ne change rien à sa structure, comme nous l'avons démontré au tout début; toutefois, d'après plusieurs auteurs, le taux calcium-phosphore dans la salive aurait un rôle dans le processus de la carie dentaire (26). Ces auteurs disent que, chez l'enfant, le processus de la carie s'arrête, lorsque la rétention de phosphore et de calcium est bonne. Chez 28 enfants indemnes de carie, la rétention de calcium et de phosphore est respectivement de 17 et 15 milligrammes par kilogramme; elle s'abaisse à 10 et 8 milligrammes, chez 38 enfants présentant des dents cariées. Que se passerait-il alors? Comme la rétention du calcium et phosphore est moindre dans l'organisme, le taux calcium-phosphore de la salive est abaissé. Par ce fait, le pouvoir tampon de la salive serait amoindri et, alors, l'acide formé par la fermentation des sucres aurait beau jeu sur les dents.

Cette théorie, cependant, n'est pas partagée par tous les auteurs. Bunting (27) a prescrit à des enfants et des adultes, 3 grammes de Ca, par jour, sous forme de comprimés, et ceci, pendant 2 semaines. L'analyse de la salive, avant et après l'expérience, n'a donné aucun changement appréciable. Malan et Ockerse (28), en équilibrant avec du calcium et du phosphore une ration déficiente en ces éléments, observent, après trois années, aucune réduction sensible du nombre de caries.

N'y aurait-il donc aucune influence du métabolisme phosphocalcique dans la prévention de la carie, lorsque la dent a fait son éruption? (29).

3—Les vitamines

D'un début assez obscur, lorsque Funk, en 1911, annonça un nouvel aliment qu'il appela vitamine, i.e. substance azotée indispensable à la vie, une multitude de vitamines sont apparues dans le domaine de la chimie alimentaire et la fin n'est pas encore en vue. Cependant, nous nous bornerons seulement à l'étude des vitamines nécessaires à l'édification de dents saines. Nous étudierons donc successivement les vitamines A, C et D.

VITAMINE A — Nous pouvons, avec Polonovski, l'appeler la vitamine de croissance liposoluble. Elle est nécessaire à la formation normale de tout le tissu épithélial. De plus, elle aide à conserver l'intégrité physiologique de toutes les structures épithéliales et ainsi maintenir la première ligne de défense contre l'invasion des bactéries, car le grand rôle des structures épithéliales est de mettre l'organisme en relation avec le milieu extérieur et de protéger cet organisme contre ce monde extérieur. La déficience de la vitamine A amène une métaplasie kératisante des structures épithéliales: c'est ainsi, par exemple, que l'épithélium nasal aura tendance à avoir une forme squameuse, au lieu de la forme ciliaire nécessaire à la sécrétion normale des fosses nasales. Son insuffisance provoque une maladie spécifique, la xérophtalmie et elle peut causer aussi des troubles au tissu épithélial des reins, des poumons, etc.

Cette vitamine intéresse le dentiste. Pourquoi? Rapportons-nous à l'histologie dentaire et nous verrons que l'émail est formé de tissu épithélial. En effet, la formation du sac adamantin provient du tissu épithélial, qui, à un moment donné, s'invagine dans le tissu conjonctif, déclanchant ainsi le mécanisme qui donnera naissance à la dent.

Ainsi, une déficience de la vitamine A, apparemment, produit une inhibition de la spécialisation cellulaire. Les améloblastes subissent une atrophie régressive et les nouvelles cellules de l'organe de l'émail ne progressent pas, dans leur développement, jusqu'à la fin du stade améloblastique. Les odontoblastes s'atrophient aussi

et les nouvelles cellules, de la même façon, n'atteignent que le stade ostéoblastique et, par conséquent, produisent une substance intercellulaire d'un ordre plus inférieur i.e. de l'ostéo-dentine au lieu de la dentine tubulaire. De plus, il y a un retard dans le développement, un ralentissement dans la production des structures dentaires (30).

Boyle (31) a examiné les incisives d'un enfant de 3½ mois qui avait souffert d'avitaminose A et il a noté que: a) les améloblastes et le réticulum étoilé étaient remplacés par une ligne d'épithélium squameuse et que b) la dentine était mal calcifiée.

La vitamine A régit donc l'intégrité des améloblastes, cellules productrices de l'émail, et, par le fait même, joue un rôle important dans la calcification dentaire. Par contre, une déficience de la vitamine A amène une métaplasie de ces cellules et il en résulte une mauvaise calcification de l'émail: les portes seront alors ouvertes à la carie, lorsque les dents feront leur éruption.

VITAMINE C—Si le scorbut est une maladie connue, depuis plusieurs siècles, et si l'action curative de certains produits végétaux (extraits d'aiguilles de pin) et de certains fruits (oranges, citrons) est une découverte déjà ancienne, ce n'est qu'à partir de 1907, que l'expérimentation sur le cobaye, réalisée par Holst et Frolish, devait conduire à considérer le scorbut comme une avitaminose. La vitamine actuelle, l'acide ascorbique, a été isolée en 1932, et synthétisée l'année suivante par Haworth, Karer et Reichstein (32).

Les nombreuses fonctions de cette vitamine sont: 1) d'agir comme enzyme dans l'oxydation des cellules du corps humain; 2) d'être essentielle au développement du collagène qui est le constituant principal des tissus conjonctifs et de la matrice organique de l'os; 3) de jouer un rôle dans la perméabilité des capillaires et 4) de présider à la synthèse normale des globules rouges.

Par contre, l'avitaminose C produit différents troubles dans l'organisme, dont

le principal est le scorbut. Le scorbut se caractérise tout d'abord par des lésions gingivales: gonflement, ulcération; resorption de l'os alvéolaire et chute des dents; une tendance de plus en plus marquée aux hémorragies: hémorragies gingivales, hématomes périarticulaires et sous-cutanés. Mentionnons aussi comme autres troubles: 1) un manque de la substance intercellulaire à garder intactes les parois des capillaires; 2) hémorragie dans plusieurs parties du corps; 3) malformation des extrémités osseuses; 4) hypertrophie cardiaque; 5) dégénérescence des fibres cardiaques; 6) anémie due à la destruction des cellules formatrices du sang dans la moelle osseuse et enfin 7) perte de calcium.

La dent, à son stage de formation, a un grand besoin de cette vitamine, car l'avitaminose produit des troubles sérieux dans la calcification de chacun des tissus de la dent. Isaac Schour (33) cite les anomalies suivantes: malformation des améloblastes, des odontoblastes et des cémentoblastes; déposition de dentine dans la pulpe et hypercalcification de la pré-dentine.

Nous voyons donc qu'en plus de garder intacts les tissus périodontaires i.e. gencives et os alvéolaire, où l'acide ascorbique intervient dans la formation de l'oséine qui constitue la matrice protéique de l'os, la vitamine C est nécessaire au bon maintien des améloblastes et des odontoblastes et, par conséquent, joue un rôle dans la calcification des dents.

VITAMINE D—L'avitaminose D est peut-être la principale cause de l'hypocalcification des dents. Cette vitamine est essentielle à absorption et à l'utilisation des sels minéraux dans l'organisme. Ses fonctions sont en relation très étroite avec celle de la glande parathyroïde.

Isaac Schour (34), après avoir énuméré les mauvais effets causés par l'hypofonction de la parathyroïde sur des rats, hypofonction provoquée par l'ablation de cette glande, nous dit que le fait de leur administrer des extraits glandulaires, arrête l'hypocalcification osseuse et dentaire. Il ajoute aussi que des résultats identiques

sont obtenus, lorsque la vitamine D est administrée à la place des extraits glandulaires.

J. D. Boyd (35), dans un article sur le métabolisme du calcium et du phosphore, nous dit que, pour l'absorption normale de la chaux, il est nécessaire que la vitamine D soit présente dans l'organisme. Il ajoute que l'absence de cette vitamine diminue, à un tel point, l'absorption du calcium dans l'intestin, que l'excrétion, par voies urinaires, peut cesser complètement et la quantité totale apparaît dans les selles, non digérée.

La vitamine D est essentielle à l'utilisation des sels minéraux dans l'organisme. Pour que la calcification soit normale, la quantité de Ca, dans le sang, doit toujours être constante (10 mg par 100 cc) et la vitamine D est nécessaire à son maintien. Des expériences ont prouvé que, dans les cas de déficit très prononcé en calcium, une diète riche en vitamine D maintiendra la quantité normale dans le sang aussi longtemps que la réserve dans l'os n'aura pas été épuisée (36).

Cependant, Randoin et Simonnet (37) ont montré que le rapport Ca/P doit osciller entre 1 et 1.3 pour que l'absorption soit maximum et permette l'assimilation calcique chez un sujet dont le régime est pauvre en vitamine D. Si ce rapport est inférieur à 0.5 ou supérieur à 3, l'assimilation est entravée.

Dans le premier cas, le phosphore est éliminé dans l'urine sous forme de phosphate de Ca. Dans le second, où nous avons beaucoup plus de Ca que de P, une grande partie du calcium se trouvera éliminée au niveau de l'intestin, sous forme de phosphates, élimination qui tendra à diminuer le phosphore total de l'organisme et déminéralisera le squelette. Dans un cas comme dans l'autre, il y a peu de calcium assimilé. Il est rare que ce rapport Ca/P soit toujours exact dans la diète. Il suffit alors d'ajouter à la diète de la vitamine D qui corrige l'action défavorable d'un déséquilibre alimentaire phospho-calcique.

L'avitaminose aura donc le même effet sur les dents en voie de formation que le déficit en calcium: émail et dentine mal

calcifiée, zones interglobulaires imparfaitement calcifiées (38).

Nous avons vu, en traitant du calcium, que la thérapeutique des sels minéraux, pendant la grossesse, semblait avoir peu d'effets sur la calcification des dents du fœtus; de même que sur celle du bébé, pendant l'allaitement. C'est le contraire, en ce qui concerne la vitamine D. Si la mère enceinte veut être en mesure de donner à son enfant une dentition solide, elle doit voir à ce que sa diète soit riche en vitamines, surtout la vitamine D.

Pour résumer ce qui précède sur les vitamines, disons que: 1) les vitamines A, C et D jouent un rôle important, durant la calcification dentaire; 2) l'avitaminose A, C et D est beaucoup plus à craindre que le déficit en calcium, pendant la grossesse et l'allaitement, en ce qui concerne l'hypocalcification des dents; 3) pendant l'enfance et l'adolescence, une diète bien balancée et riche en calcium et en vitamines est nécessaire pour former des dents bien calcifiées et alors résister davantage à la carie.

III—Diète adéquate pour une bonne calcification

L'importance d'une diète adéquate, en ce qui concerne la prévention de la carie, est d'autant plus grande qu'elle est pratiquement limitée au stage de la formation des dents. Alors, pour être efficace, la diète d'un individu doit être suivie, pendant une très longue période, qui s'étend de la période pré-natale jusqu'à l'adolescence.

Ainsi, si nous nous reportons aux tableaux des pages 26 et 27, nous remarquons que la femme enceinte et allaitante a un plus grand besoin de Ca et de P, pour prévenir leur perte dans les os de la mère; de vitamines A, C et D pour pourvoir aux besoins que requiert le fœtus qu'elle porte. La mère enceinte devra donc ingérer des aliments riches en ces éléments. Cette nourriture devra comprendre des fruits, des céréales, des légumes, des oeufs, de la viande, du poulet et du poisson en petites quantités. Entre les repas, la mère peut prendre

souvent et avec profit des oeufs battus, du gruau et du lait, du cacao, du lait malté et autres breuvages similaires. Il serait recommandable que la future mère prenne, tous les jours, une cuillère à thé d'huile de foie de morue ou son équivalent, si elle veut être en mesure de donner à son enfant une dentition solide.

Les besoins en Ca et en vitamines A, C et D, lorsque le bébé vient au monde, ne sont pas très grands, mais ils augmenteront à mesure que l'enfant grandira. La nourriture du bébé doit alors pourvoir à ses besoins. Le lait maternel constitue le principal aliment de la première enfance. Cependant, à cause de sa pauvreté en certains éléments essentiels à la croissance, il faut ajouter à ce régime: dès le quinzième jour, de l'huile de foie de morue, pour suppléer au manque de vitamines A et D; vers le vingt-et-unième jour, des jus de fruits crus tels: des jus d'orange, de tomate ou de pamplemousse, pour pourvoir au déficit de la vitamine C.

Vers le troisième mois, l'enfant commence à manger à faibles quantités, des céréales, des bouillons de légumes, du jaune d'oeuf et des fruits. De un à cinq ans, la diète quotidienne pourrait comprendre 1 à 1½ chopine de lait, un oeuf, de la viande ou du poisson, une patate, une orange et un autre fruit au choix; deux services de légumes, verts et jaunes de préférence; comme céréale, ne pas dépasser l'équivalent de deux tranches de pain; du beurre et de l'huile de foie de morue.

Lorsque le bébé a un nombre suffisant de dents pour mastiquer, on peut ajouter à la diète de l'enfant des légumes et des fruits crus comme de la laitue, du céleri ou des carottes.

Lorsque le bébé atteint l'âge de cinq ans, la portion de lait est augmentée à une pinte. Cependant, la quantité de céréales est tenue en bas de l'équivalent de trois tranches de pain car, quoique les céréales soient une grande source de phosphore, elles n'en sont pas moins une très grande source de sucres fermentables et on doit éviter l'ingestion de ces sucres, car ils ont beaucoup d'influence sur la carie.

SCHOOL OF DENTISTRY—UNIVERSITY OF PENNSYLVANIA
PHILADELPHIA, PA.**PROTECT THE TEETH BY ADEQUATE DENTAL CARE AND PROPER FOOD**

Good nutrition and a well balanced diet are fundamental for dental health at all ages.

TO BUILD SOUND TEETH foods must provide adequate calcium and phosphorus in good proportions and liberal amounts of vitamins D, C and A.

TO MAINTAIN SOUND TEETH AND HEALTHY GUMS these same foods are necessary.

The following table lists the most important foods for health:

TOOTH BUILDING AND TOOTH PROTECTING FOODS	DESIRABLE AMOUNTS	MINIMUM AMOUNTS	CHEAPEST SOURCES
MILK *Supplies—Calcium Phosphorus Vitamin A Vitamin D in vary- ing amounts	1 quart daily for all growing children, expectant and nursing mothers 1 pint daily for each adult	Daily— 1 quart for expectant and nurs- ing mothers and all children under 2 years 1½ pints to 1 quart for children 2 to 12 years 1 quart for children 12 to 18 yrs, ½ pint for adults	Grade B pasteurized Evaporated Milk Dried Milk Powder
LEAFY VEGETABLES Supply Calcium Phosphorus Vitamins A, C, D in varying amounts	2 to 3 servings daily for adults and children over 6 years. 1 to 2 servings daily for younger children Salads are best	1 serving raw at least three times a week, daily if possible 1 serving cooked at least two to three times a week	Spinach, Escarole, Cabbage Beet Tops, Turnip Tops Collards, Romaine Swiss Chard, Dandelions
OTHER VEGETABLES Supply smaller amounts of minerals and vitamins most essential for teeth	1 to 2 vegetables daily besides potatoes and leafy vegetables	At least one vegetable daily be- side potatoes and leafy vege- tables	Potatoes, Turnips Carrots, Onions Dried Beans, Dried Peas
FRUITS Supply—Vitamins C and A in varying amounts Calcium } in varying Phosphorus } amounts	1 to 2 servings of citrus fruit daily 1 to 2 servings of other fruit daily	Orange or tomato juice daily for all children under 3 Raw fruit at least 3 times a week for others Cooked fruit 2 to 3 times a week	Canned Tomatoes Bananas Apples Oranges under 25c a dozen Others in season
CEREALS Supply—Phosphorus Some Calcium Whole grains are best	Use whole grain bread or cereal at each meal in preference to white bread or cereal	Whole grain bread or cereal once daily if possible	Yellow Cornmeal Cracked Wheat Oatmeal Rice Macaroni, White Bread
EGGS Supply—Calcium Phosphorus Vitamins A and D	1 daily for each child and adult	3 to 6 a week for children under 6 years 3 to 4 a week for others	Storage Eggs Fresh Eggs in spring and summer
MEAT AND FISH All kinds supply phosphorus Liver, oysters, clams also sup- ply calcium and vitamin A	Meat or fish daily for children over 6 and adults	2 to 4 times a week	Stewing Cuts of Beef and Lamb Pork and Lamb Liver Canned Salmon, Dried Cod Fish
CHEESE Supplies—Calcium Phosphorus Vitamin A in varying amounts	Use once or twice a week in ad- dition to or as a substitute for meat	Use once or twice a week in place of meat	Cottage Cheese Domestic Cheese—under 25c a lb.
BUTTER Supplies—Vitamin A Some Vitamin D	Use daily on bread and in cook- ing if possible	Daily on bread for children un- der 6 and others if possible Other fats for cooking	Tub or Print Butter Oleomargarines from animal fats Cooking Oil, Lard, Suet
COD LIVER OIL Supplies—Vitamins A and D (Concentrates of Vitamins A and D as suggested by physicians may replace cod- liver oil)	As directed by physician. Usual- ly 3 teaspoons daily for chil- dren under 2 years, 4 to 5 table- spoons a week for older chil- dren during winter	2 to 3 teaspoons daily for chil- dren under 2 years 2 to 3 tablespoons a week for pre-school children if possible	Plain Cod Liver Oil by the pint

*Only the dietary essentials most needed for dental health are listed. Each of these foods provides other essentials for good nutrition.

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October, 1934.

Fig. 3.—Diet Chart.

RECOMMENDED DAILY ALLOWANCES FOR SPECIFIC NUTRIENTS.
Committee on Food and Nutrition, National Research Council.

	Calories.	Protein, gm.	Calcium, gm.	Iron, mg.	A,* inter-national units.	Thiamine (B ₁), † mg.	Ascorbic acid (C), † mg.	Riboflavin, mg.	Nicotinic acid, mg.	D, inter-national units.
Man (70 kg.):										
Moderately active	2000	70	0.8	12	5000	1.8	75	2.7	18	
Very active	4500	..	..	..	..	2.3	..	3.3	23	†
Sedentary	2500	..	..	..	..	1.5	..	2.2	15	
Woman (56 kg.):										
Moderately active	2500	60	0.8	12	5000	1.5	70	2.2	15	
Very active	3000	..	..	..	..	1.8	..	2.7	18	†
Sedentary	2100	..	..	..	..	1.2	..	1.8	12	
Pregnancy (latter half)	2500	85	1.5	15	6000	1.8	100	2.5	18	400-800
Lactation	3000	100	2.0	..	8000	2.3	150	3.0	23	400-800
Children up to 12 years:										
Under 1 year§	100 per kg.	3-4 per kg.	1.0	6	1500	0.4	30	0.6	4	400-800
1-3 years	1200	40	1.0	7	2000	0.6	35	0.9	6	
4-6 years¶	1600	50	1.0	8	2500	0.8	50	1.2	8	
7-9 years	2000	60	1.0	10	3500	1.0	60	1.5	10	†
10-12 years	2500	70	1.2	12	4500	1.2	75	1.8	12	
Children over 12 years:										
Girls—13-15 years	2800	80	1.3	15	5000	1.4	80	2.0	14	
16-20 years	2400	75	1.0	15	5000	1.2	80	1.8	12	†
Boys—13-15 years	3200	85	1.4	15	5000	1.6	90	2.4	16	
16-20 years	3800	100	1.4	15	6000	2.0	100	3.0	20	†

These are tentative allowances toward which to aim in planning practical diets. These allowances can be met by a good diet of natural foods; this will also provide other minerals and vitamins, the requirements for which are less well known.

* Requirements may be less than these amounts if provided as vitamin A, greater if chiefly as the provitamin carotene.

† One mg. of thiamine equals 333 international units; 1 mg. of ascorbic acid equals 20 international units (1 international unit equals 1 U.S.P. unit).

‡ Vitamin D is undoubtedly necessary for older children and adults. When not available from sunshine, it should be provided probably up to the mineral amounts recommended for infants.

§ Needs of infants increase from month to month. The amounts given are for approximately 6 to 18 months. The amounts of protein and calcium needed are less if from breast milk.

¶ Allowances are based on the middle age for each group (as 2-5, 8 and so on) and for moderate activity.

Il y aura une augmentation graduelle de la quantité des éléments nutritifs, à mesure que l'enfant approchera de l'adolescence et cette augmentation devra être maintenue durant cette période si difficile.

En suivant une telle diète, l'enfant est porté à développer un corps sain et des dents bien calcifiées qui résisteront davantage à la carie. Elles le seront en autant que l'enfant n'aura pas eu de maladies à haute température et n'aura pas souffert de troubles endocriniens qui amènent une mauvaise calcification des dents.

Résumé

Une dent bien calcifiée résiste davantage à la carie. L'alimentation a un rôle à jouer dans cette calcification. Lorsque la calcification des dents est terminée, une diète adéquate n'a aucun effet sur la prévention de la carie, car la dent semble très peu sensible à l'absorption et à la résorption secondaire. Une diète adéquate aura donc beaucoup d'effets sur la calcification, lorsqu'elle sera administrée, durant la période de formation des dents.

Nombreux sont les facteurs alimentaires qui ont une influence sur une bonne calcification, et contre la carie, lorsque les dents ont fait leur éruption.

Les éléments énergétiques: les protéines auraient pour rôle d'élever le pouvoir tampon de la salive; les gras favoriseraient l'élimination des sucres; les sucres, par contre, ont un rôle néfaste à jouer dans la carie dentaire.

Les sels minéraux, comme le calcium et le phosphore, ainsi que les vitamines A, C et D, sont les éléments essentiels pour former des dents bien calcifiées qui résisteront davantage à la carie.

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95 est, Jean Talon.

Nouvelles de l'Association

Enquête sur la santé, au Canada

On vient de publier les premiers rapports sur l'enquête entreprise sur la santé au Canada, enquête qui fut menée par le Ministère de la Santé Nationale et du

Bien-Etre Social et par le Bureau national des Statistiques. Pour compiler ces statistiques, des énumérateurs expérimentés ont visité environ 10,000 familles choisies au hasard dans tous les milieux,

grandes villes, petites villes, campagnes, des dix provinces canadiennes.

Durant quatorze mois, les enquêteurs se sont rendus une fois le mois dans ces familles et plus de 80% des personnes qui ont fait l'objet de l'enquête ont été visitées jusqu'à la fin. Ces chiffres fournis par l'enquête, représentent les dépenses encourues par chaque famille durant cette période. Ces montants permettent de tirer des conclusions intéressantes d'ordre économique sur l'importance que les citoyens canadiens accordent à leur santé. Par exemple, \$32,900,000 ont été déboursés pour des traitements dentaires, durant cette période; si on divise cette somme entre les 5,000 dentistes du Canada, on obtient la moyenne de \$6,580, par dentiste. De même, si on divise le total de \$87,700,000, payé aux médecins durant le même laps de temps, on se rend compte qu'environ chaque médecin, a perçu en moyenne, \$6,265, si on tient compte qu'il y a 14,000 médecins au pays. Ces chiffres n'incluent pas les argentés dépensés dans des organisations d'assurance-santé. Ces moyennes suscitent beaucoup d'intérêt, mais elles ne représentent pas l'image exacte de la situation puisqu'il est bien difficile d'établir le nombre approximatif des praticiens en exercice actuellement. Le nombre approximatif des praticiens au cours de l'année de l'enquête est donné en chiffres ronds. Un pourcentage notable de ces praticiens n'exercent pas au sens où on l'entend généralement. Conséquemment, les moyennes d'argent perçues par les praticiens seraient plus considérables pour les deux professions.

Le public a dû payer en soins dentaires, une somme globale qui se classe en troisième rang, après les soins médicaux et les soins hospitaliers, la proportion étant de 11 (pour les médecins), 6 (pour les hôpitaux) et 5 (pour les dentistes).

En plus de ces montants payés directement aux hôpitaux et aux médecins, il faut compter ce qu'on paye les groupements d'assurance-santé, environ la moitié

plus. Pour les besoins de l'enquête, on a catalogué comme étant une famille (en conformité avec le recensement de 1951) le mari et l'épouse avec ou sans enfants, habitant un même foyer. Toutes les autres personnes, même si elles vivent en famille, chez des parents, étaient classifiées comme des personnes seules. Ces personnes seules et les familles étaient comptées comme des unités familiales.

Seulement 1,259,000 unités familiales, ou 27.6% du total estimé à 4,500,000, ont effectué des déboursés pour des traitements dentaires durant l'année de l'enquête. Cependant, ces mêmes unités familiales, dans la proportion de 52,6%, ont dépensé pour des services médicaux, et 15% pour des services hospitaliers.

La dépense moyenne par unité familiale pour les trois genres de services aurait été la suivante:

	Nombre de personnes dans l'unité familiale					
	Tous Nombres	1 pers.	2 pers.	3-4	5-6	7-
Médecin	36.60	25.00	38.60	38.80	37.80	39.20
Hôpital	68.10	87.30	84.70	60.70	65.20	60.70
Dentiste	26.20	21.50	26.80	28.30	25.30	20.60

Si on divise le montant versé par une unité familiale par le nombre d'individus, qui la composent, on est surpris de constater que la proportion payée pour des soins dentaire, même au sein des 27% qui ont visité le dentiste, diminue à mesure que le nombre des composants de la famille augmente; elle arrive presque à rien pour les familles nombreuses.

Unité familiale d'une personne	\$21.50 chacune
" 2 "	13.40 "
" de 3 à 4 "	9.43 à 7.07 chacune
" 5, 6 "	5.06, 4.21 "
" 7 personnes ou plus "	moins 2,940 chacune

Ces chiffres méritent d'être étudiés à la lumière des estimés compilés par le comité d'Etude sur l'Assurance-Santé de l'A.D.C. pour des soins dentaires adéquats.

Ces statistiques joueront sans doute un rôle des plus importants quand il s'agira d'établir des estimés pour des services de santé.



ANGEL GLACIER, JASPER NATIONAL PARK, ALBERTA

The Best Pedagogue—Nature is man's teacher. She unfolds her treasures to his search, unseals his eye, illumines his mind, and purifies his heart; an influence breathes from all the sights and sounds of her existence.—Street.



A. J. COUGHLAN, D.M.D.

Saint John, N.B.

President, The Canadian Dental Association, 1953-1954.



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Diagnosis And Procedures In Oral Surgery

by WARREN R. SCHRAM*, D.D.S., M.S.D.

THIS material deals largely with everyday problems encountered in practice. I present it because I believe that it is the precise application of elementary principles which is largely responsible for satisfactory results. A sound scientific background for surgery is of great importance, and yet such a background alone does not insure success. It is only the information which we bring to bear actively in diagnosis and surgery, that is of value to the patient.

EXAMINATION AND DIAGNOSIS

A knowledge of the patient's general physical condition is always of assistance in making a diagnosis, and in performing safe and satisfactory treatment. The dentist should make critical observations of the patient's general appearance, and note any significant abnormalities. Swollen ankles and a general appearance of edema are indicative of cardiac insufficiency, while edema below the eyes is suggestive of renal insufficiency. Gnarled and deformed fingers indicate arthritis. This group of patients is often treated more safely under prophylactic doses of penicillin. A jaundiced patient suggests a tendency toward post-operative haemorrhage which is also true of the anemic patient, who is recognized by a glossy red tongue with pallor of skin and

mucous membranes. A patient may give the impression of recent and considerable loss of weight. This may indicate diabetes, which if not controlled makes it unwise to undertake any surgery.

Paralysis of the face may indicate a Bell's palsy or may be due to a cerebral haemorrhage and this would suggest that vaso-constrictor drugs should be used with caution. Slurred speech may often be a part of the syndrome of cerebral haemorrhage, yet this is not always the case. Very recently we treated a patient who exhibited this symptom, and on questioning it was determined that he was under a maintenance dose of phenobarbital. He had taken this drug for years at the direction of his physician, as a prophylaxis against angina pectoris. He also carried nitroglycerin tablets. Such a patient should always be treated with extreme caution.

These are some of the conditions that should be noted at the time that the patient is first seen; however, it is usually not wise to discuss them with the patient until an oral examination has been made.

A dentist often puts himself at a great disadvantage by focusing his attention upon the tooth that the patient complains about. It is wise first to note any apparent swelling of the face or glandular enlargement of the neck;

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and second to examine carefully, and with a good light, all the mucous membranes of the mouth and to be particularly alert for pre-cancerous or cancerous lesions. To overlook an incipient cancer, one amenable to treatment, should rank well toward the top of the list of disservices which the dentist might do for his patient. I believe that a dentist making an examination of a patient's mouth, for any reason, should hold himself responsible for not overlooking such lesions. It does little good to diagnose an advanced malignancy, but to detect an early one and place the patient in the proper hands for treatment, may save a life.

Perhaps a word of caution is advisable here. We are all familiar with certain abnormal growths in the mouth, which are not pre-cancerous and are in no way dangerous. Patients are becoming more and more "cancer conscious", and if it is considered wise to inform a patient about such a growth, he should not be left in doubt about its nature. We have seen a number of badly frightened patients who have reported that they had been informed of a toris, which they had not been conscious of, and that it had been referred to as a tumor.

After the appearance of the face and the mucous membranes of the mouth have been noted, the dentist is ready to examine the teeth in general and particularly the tooth that is complained about; at the same time giving careful consideration to the patient's history of his difficulty.

At this time, if immediate operative procedure is contemplated it seems proper, and indeed the only safe course, to get a brief but pertinent history of the patient's general health. Such questions may be asked as: Is the patient under a physician's care? Is he taking medicines? Does he have trouble following mild exertion? Has he had the experience of bleeding following previous extractions? These questions are certainly in order, and they make your dealings with the patient much more intelligent.

In mouths where there seems to be no contra-indication to immediate removal of teeth, if there is any evidence of Vincent's infection or if the mouth is particularly unclean, we cleanse the teeth and mouth with hydrogen peroxide full strength (3%). In instances where the time of extraction is elective, healing is more likely to be satisfactory if the teeth are cleaned, at least of gross deposits of calculus and debris, before operation.

INFECTIONS

As we all know, many patients come for treatment when a tooth is painful. The decision as to how to deal properly with these patients calls for careful consideration. The length of time the tooth has been painful is not always a safe guide. We believe that if a tooth is sore, if there is no appreciable swelling, and if the temperature is near normal, such a tooth can be extracted with reasonable safety providing anesthesia can be obtained without injecting into the infected area.

Extreme care is exercised at all times not to remove the lower third molar tooth while there is active infection between the operculum and the tooth. In many instances infection which would make removal of this tooth hazardous is not particularly apparent. It seems quite certain that an infective process associated with the lower third molar tooth is much more likely to cause serious complications, if mishandled, than will that in any other location.

In those cases where the temperature is elevated a degree or more and edema is present, and this applies particularly if it is on the lingual of the mandible, we prefer to wait for localization. In such cases, if the pulp chamber of the tooth can be entered, the patient will sometimes experience relief. This procedure will do no harm, providing a broach is not carried down into the lower two-thirds of the root. It is recognized that many such teeth may be extracted with impunity, but it is submitted that it is not possible to know the outcome in any given case.

We treat these cases conservatively, and during the past ten years, while I have seen some of them run a stormy course and require extra-oral incision for drainage, I know of none which have precipitated an osteomyelitis or other serious condition.

If considerable swelling and pain develop, and the infectious process does not seem likely to localize intra-orally, the patient is better and more safely cared for in a hospital, where necessary therapeutic measures can be accurately carried out, and he would be in a favorable position to have intramuscular penicillin. When such a patient is sent to the hospital, his fluid intake is kept up, heat is applied externally, and an irrigating apparatus is set up to run large quantities of hot saline solution into the mouth and out into a basin at frequent intervals. Penicillin is given intramuscularly in sufficient dosage to keep the blood level high. In cases of acute edema in the floor of the mouth, the respiration should be watched closely and sedative drugs should be used with caution. A tracheotomy set should be available for emergency use. In the last three or four years I have seen several patients with diffuse and symmetrical swellings involving the entire floor of the mouth, which in at least two cases, very nearly arrested respiration. Such patients should of course be hospitalized.

These cases of diffuse cellulitis associated with the teeth will heal by resolution, spontaneous drainage will occur, or incision for drainage must be made. The proper time to incise requires careful consideration. Too early incision, with as is sometimes suggested the thought of anticipating pus, is to be discouraged. However, when localization has been established by fluctuation, incision should be made. If an intra-oral incision is made, an opening about half an inch wide and down to the bone over the apex of the offending tooth, is proper. A wick of medicated gauze should be carried to the depth of the incision.

Under careful management extra-

oral incision is rarely necessary, but it is of importance to open a fluctuant area that is pointing extra-orally as a great deal of unnecessary scarring on the face is thereby avoided. With few exceptions, such an incision is made through the skin only, and below the angle of the mandible. By blunt dissection a haemostat may be carried from the skin incision in the necessary direction to reach the pus. A rubber drain is kept in the opening for the necessary length of time.

If the severity of an infection does not warrant hospitalization, or there are reasons why it is impossible, it is extremely important that the patient is given specific instructions as to home care, and sufficiently impressed with the seriousness of his condition so that he will carry them out.

When it is decided that a tooth is to be removed, there are certain considerations that have a most important bearing upon the success of the operation. It is recognized that oral tissue is unusually resistant to infection and that surgery in the mouth of necessity be done in a septic field; yet every operator should use precautions which will prevent the introduction of foreign bacteria. Such bacteria, carried on hypodermic needles, operative instruments, sponges, or the surgeon's hands, may precipitate disastrous infections.

The importance of adequate light in the exact area where needed, cannot be over-emphasized. The ordinary overhead lighting is not sufficient in many instances, and should be supplemented by a light which can be accurately focused on the operative field. There are a number of excellent headlights which many operators prefer to use for this purpose. There are strong lights which may be carried into the mouth and held by an assistant. Either or both are suitable; the important consideration is the minute illumination of the operative field.

ANESTHESIA

The choice of anesthesia should be influenced by the operator's experience,

the facilities at hand, and the patient's temperament; but the final decision should rest upon which method will permit the operator to do the best work. The use of a pre-medicating drug such as Nembutal, given in $1\frac{1}{2}$ grain dose for an adult one-half hour before operation, is often helpful when either general or local anesthesia is to be used. It is of particular value as an adjunct to local anesthesia since many highly nervous and apprehensive patients may be made tractable; and pharmacologically, it is believed that the barbiturates act as an antidote for some of the side effects of local anesthetic solutions.

It is important to bear in mind that when local anesthesia is being used, the cooperation of the patient is gained or lost very early. The use of medication in selected cases, sharp needles, accurate placement of the solution, allowing sufficient time to elapse before operation, positive and considerate handling of the patient, are all important in patient control.

If all tests indicate that anesthesia is profound, it should be remembered that such tests are indicative of anesthesia, but not a guarantee that it has been attained. I believe that it may be stated, almost categorically, that if a patient is cooperative when anesthesia is induced and complains of the surgery, he has been improperly handled psychologically or the operator has failed to obtain complete anesthesia. Satisfactory local anesthesia involves two very important accomplishments.

1. Obtaining anesthesia with as little discomfort to the patient as possible.
2. Securing an anesthesia that is profound.

In making mandibular injections it works well to place the tip of the needle almost in contact with the tissues, and then ask the patient if he can open a little wider. While he is thinking of this, the needle is deftly carried through the soft tissue which is tensed by this movement. Each insertion of the needle into the unanesthetized

tissue adds to the patient's discomfort, and it is important to inject whenever possible into tissue which has been anesthetized. A half cc of procaine, deposited in each mental foramen region with the tissue drawn taut, will give anesthesia of the soft tissue from bicuspid to bicuspid. If the operator wishes to infiltrate heavily for gum resection involving the lower anterior teeth, it is certainly wise to make these two injections first. Then, he may infiltrate at will without causing the patient pain.

If a mandibular injection is made for the purpose of removing a second bicuspid, when anesthesia has taken effect it is possible to start an injection over the apex of the cuspid tooth injecting as the needle is carried backward to anesthetize painlessly the soft tissues overlaying the second bicuspid. In making a mandibular injection for the removal of the first bicuspid and the teeth anterior to it, it is not necessary to make a buccinator injection since this tissue is anesthetized by the mandibular injection.

When injecting for the six upper anterior teeth, if a long needle is used, the frenum drawn tightly, and the needle started in a lateral direction injecting as it is carried into the tissue; it is not difficult to carry the needle to the apex of the cuspid. Then by withdrawing the needle and inserting it in anesthetized tissue near the frenum, the needle may be carried in the other direction to the apex of the cuspid. This will not anesthetize the teeth necessarily, but it will make it possible for the operator to make his standard injections into anesthetized soft tissue. When a needle is inserted in soft tissue, it is advisable to inject solution at once, rather than to carry the needle to the point where the main injection is to be made.

To obtain profound anesthesia, we have found that a zygomatic injection is successful for nearly all upper molars. If a long needle is used, and with the patient's mouth partly closed, the needle is carried backward, up-

ward, and by all means inward close to the maxillary bone; there is virtually no danger of producing a hematoma. I usually make this injection, then inject on the lingual not farther back than the lingual root of the second bicuspid, and infiltrate with about half a cc of solution over the mesio-buccal root of the molar to be extracted, even though it be a second or third molar. In many instances this tissue is already anesthetized. If that is the case, the patient will not feel pain when the injection is made, and if it is not the case the injection is definitely required.

For most of our injections we use 2% Procaine and 1 to 50,000 Epinephrine. However, we have found that to anesthetize upper bicuspid and sometimes anterior teeth where the bone is very heavy, Zylocaine is more effective.

In making a mandibular injection, the shape of the ascending ramus of the mandible should be constantly borne in mind. It seems that the centre of the ascending ramus is the location where the solution must be placed if satisfactory anesthesia is to be obtained. This area may be determined with reasonable accuracy by placing the index finger on the external oblique ridge, and palpating the face extra-orally. It will be found that in some instances it is necessary to insert the needle rather deeply and in others very superficially, to carry the solution to the desired location.

In injecting the buccinator nerve, particularly for the removal of the lower third molar, it is advisable to insert the needle in the sulcus of the mandible and carry it backward, injecting as you proceed, into the retro-molar triangle and almost to the lingual aspect.

If the operator makes the injection as satisfactory to the patient as possible, and is as nearly certain as he can be of having anesthesia that is acceptable to the patient, it means a great deal and makes it possible for him to carry out an unhurried, precise operation.

SURGERY

The next important step is an accurate plan. In making such a plan, it should be remembered that, while the soft tissues of the mouth are remarkable for the ability to repair, the underlying bone may be easily damaged and poor healing result. The blood supply of bone is poor, as compared with soft tissue, and due to its unyielding structure it does not react well to injury. The protection of the blood supply to this tissue is important; therefore the operator should direct his technique toward leaving sound bone covered either by a blood clot or undamaged soft tissue. A further requisite to satisfactory surgery is that when the tissues are healed, they will present a contour favorable to prosthetic restoration. The plan of operative procedure should be precise and definite before any surgery is begun.

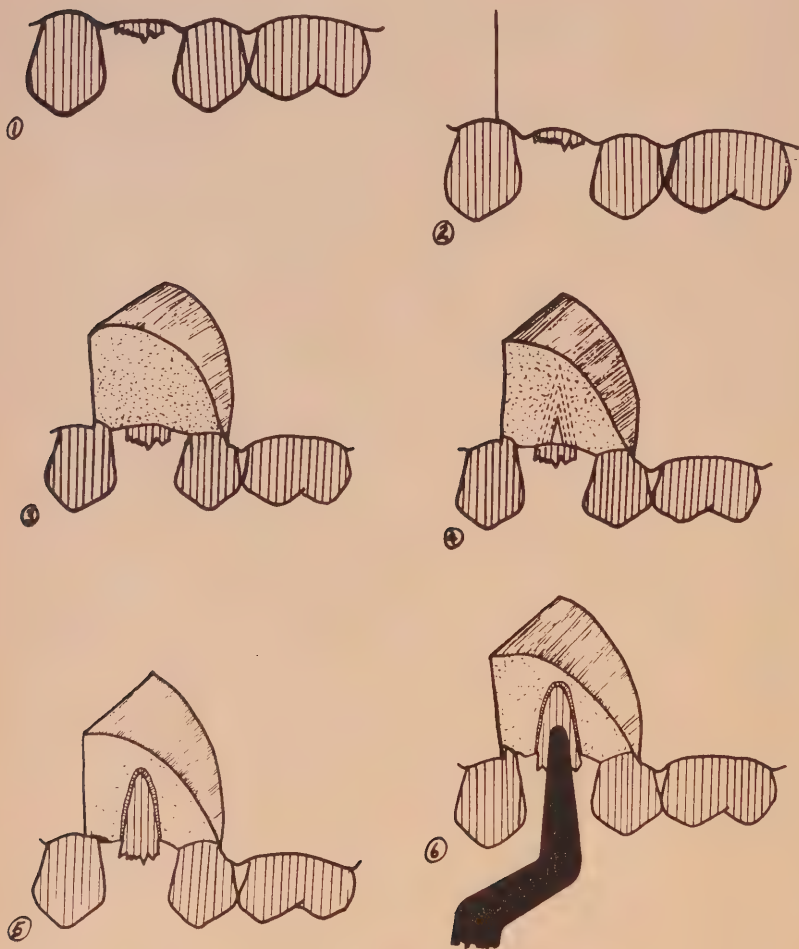
Careful clinical examination of the crown of the tooth and its investing tissues is important. The anatomy of the tooth and of adjacent structures which are not to be invaded should be carefully studied. The character of the surrounding bone, the amount of abrasion which the crown shows, the amount of decay present and the stability of the tooth when it is grasped in the fingers, are all important observations. As a general rule a radiograph should be taken of any tooth that is to be extracted, and these radiographs should be accurate. Considerable difficulty can be avoided by observing all these precautions.

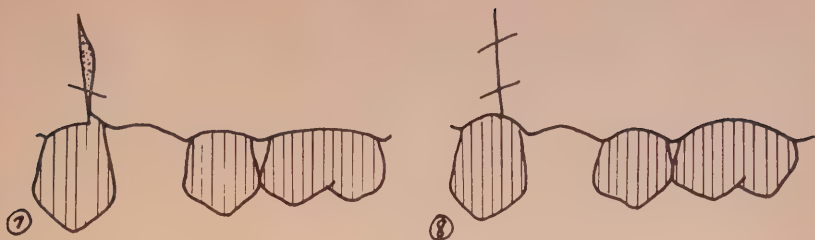
The removal of the tooth should always be accomplished in the most simple and direct manner. In dealing with the impacted tooth, in cases where the tooth has widely divergent roots likely to fracture; where the bulbous character of the root might result in the burnishing of bone, or where the shape of the roots or overlying tissue indicate that large portions of bone, such as the floor of the antrum or the cuspid eminence might be fractured by

ordinary methods of extraction, the dissection of the tooth from its position is often advisable. This method is also indicated for the removal of the roots of teeth from which the crown has been lost because of fracture or decay.

Fragments of single-rooted teeth fractured at the gum line may, in selected cases, be removed with root forceps or thin-bladed elevators. Those of certain multi-rooted teeth may be

separated by use of a surgical burr and each root removed with suitable root forceps or elevator. For this work a bi-bevel drill is preferred since it cuts both tooth and bone rapidly without heating, and leaves a space for application of pressures to the roots and space in which they can be moved. By sense of touch it is easy to know whether the burr is cutting tooth or bone. Before the operator attempts this





These eight cuts illustrate the successive steps in the surgical removal of an upper bicuspid. No. 1 shows the tooth in position. No. 2 shows the incision line. No. 3 shows the soft tissue retracted from the bone which overlies the tooth. No. 4 shows the successive beveled cuts made in the bone with a chisel to gain access to the root of the tooth. No. 5 shows the root of the tooth exposed. No. 6 shows the application of a forceps to the root of the tooth. No. 7 shows an incorrectly placed suture resulting in improper apposition of the soft tissues. No. 8 shows the correct placing of sutures to bring the tissue into correct position.

method, however, he should consider carefully whether or not this procedure may cause unnecessary trauma to bone and soft tissue, or result in the fracture of a root or the re-fracture of the tooth remnant. The removal of an entire root need not be a particularly difficult operation, while the removal of one reduced to a small apex, in an inaccessible or dangerous area, may be beyond the operative ability of a highly skilled man. In dealing with root fragments, therefore, a positive plan which will result in their removal in their entirety is important. Do not gamble with these fragments.

There are certain cases where it is necessary to remove bone, in order that a tooth or root may be delivered from its position, so that pressures may be applied by suitable forceps or elevators, to remove one or more widely divergent roots from a tooth, or to gain space to facilitate the removal of a root. In many instances this cannot be done without unnecessary injury to the soft tissues, unless they are accurately dissected back in such a manner that they may be satisfactorily sutured into place following the operation. This is in no way a difficult procedure. The incision should be made sharply and to the bone, far enough anterior to the operative field so that perhaps a quarter of an inch of un-

disturbed bone remains upon which to place the suture line. The soft tissue is cleanly dissected back, exposing the bone adequately so that the necessary dissection of the hard tissue can be carried out under the direct view of the operator.

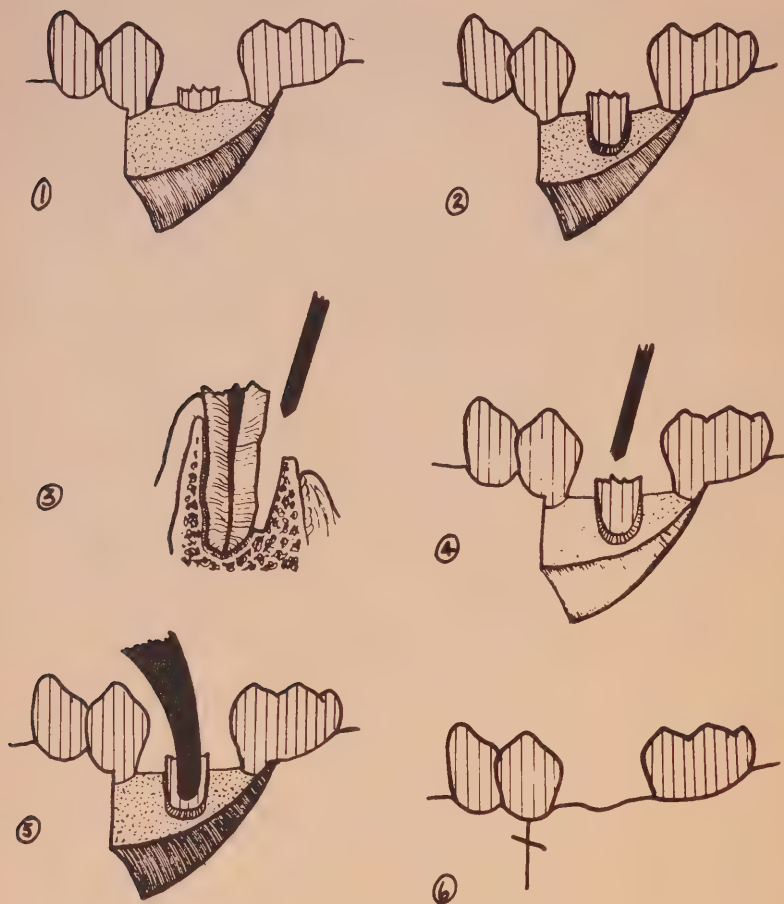
The chisel and mallet, the automatic chisel, or a surgical burr such as the bi-bevel drill, may be used for the removal of bone. The single bevel chisel is preferred when working on the upper arch and by careful application the bone may be cut smoothly and accurately, and beveled in such a manner as to make further treatment of this structure unnecessary after the root is removed. The chisel should be directed in such a way that it will cut through the bone. Following such surgery it is of great importance that the soft tissue be replaced accurately and maintained in that position by properly placed sutures that are not under tension.

If a flap operation is to be done for the removal of lower teeth, particularly the lower bicuspid teeth, certain modifications seem advisable. There is likely to be considerable haemorrhage from the soft tissue near the mental foramen, and the buccal plate overlying the root is comparatively thick. For this reason the vertical incision is made not more than half as long as it would be for a similar operation in

the upper arch. The buccal plate need not be uncovered more than half the length of the root. A small amount of the plate is then removed, preferably with a surgical drill, and space made to the buccal and between the root and the cortical plate. The fragment may then be removed by the use of a suit-

able forceps or elevator. In all operative procedures around the apices of the lower bicuspid teeth the possibility of injury to the mental nerves and vessels should be considered.

It is true that the use of sutures in the mouth may be abused, but I believe that many operators might use more of



These six cuts illustrate the surgical removal of a lower bicuspid. No. 1 shows the comparatively short incision with the soft tissue retracted. No. 2 shows the removal of the overlying bone. Nos. 3 and 4 show it is possible when necessary to carry the bony incision down along the side of the root disturbing very little soft tissue. No. 5 shows the application of the forceps. No. 6 shows the proper placement of the suture.

them with profit. We have found that sutures placed across the tooth socket in such a manner as to draw the soft tissue snugly against the bone, is the best insurance against post-operative haemorrhage. This is done immediately after the extraction in all cases where the need is anticipated. Excepting for the control of haemorrhage, sutures should not be placed under tension. When several teeth are removed in a row and the soft tissue between the teeth is separated, healing can be greatly facilitated by placing a suture from buccal to lingual through each interdental space. Where soft tissue has been elevated, as in the flap operation, I believe that the intelligent use of sutures is indicated. Number 40 black silk or cotton is suitable suture material to be used in the mouth.

It is, of course, both necessary and important not to suture margins of soft tissue so tightly over an operative wound that all drainage is prohibited. For instance, in certain cases a completely unerupted lower third molar may sometimes be removed by simply making a sharp incision distal to the second molar. In such a case, if sutures

are placed, the wound is completely closed. Here it seems advisable to place about a half inch of $\frac{1}{4}$ inch gauze in the suture line and to remove it within the next 48 hours.

CONCLUSION

In conclusion, I should like to enumerate certain factors in the practice of oral surgery which, to me, are of paramount importance.

1. Accurate observation of the patient and the obtaining of a careful history before the operation is begun.
2. An understanding of the behavior of bone in its reaction to bacterial invasion and surgical trauma.
3. The use of good surgical judgement when dealing with acute infections.
4. The induction of anesthesia which will permit unhurried, careful surgical procedure.
5. The use of radiographs and clinical observation, to permit careful planning of the operation.
6. Sharp dissection and definite procedures, calculated to leave the tissues in the best possible condition following the operation.

Two per cent of our population are caries-free. This small minority can eat anything and even do not have to keep their teeth clean. They have something that the other 98 per cent do not have. They have tooth resistance. Our future hope lies in discovering just what this 2 per cent minority class has which the 98 per cent does not have. So far, it must be admitted that dental caries shows little or no reduction throughout the world. The question is: what future approach to the problem of dental caries seems most promising?

We suggest that an intensive scrutiny of the endogenous factor may well show why some teeth do not become carious while others do.—From editorial in N.Y. State D. Jour., February 1953.

"A kind deed is never lost, although you may not see its results."

"It shows a fine command of language to say nothing."

Crown and Bridge Prosthesis

by W. D. P. CAVANAGH, D.D.S., Toronto

IN THE past crown and bridge prosthesis has been touched upon but lightly by the general practitioner in dentistry. With the development of agar hydrocolloid and improved alginate impression materials, an accurate impression of the prepared teeth has been much more easily and reliably achieved. This has focused the attention of many dentists on fixed bridge prosthesis and has led to a re-awakened interest in this type of replacement.

As a guide to the operator it is suggested that the formula of the 4 P's be kept in mind when a crown and bridge problem is encountered. The four P's of fixed bridge prosthesis may be enumerated as follows: — Prognosis, Purposes, Plan, and Preparation. When we face the problem of a partially edentulous patient, it will aid our decision greatly if we follow the conclusions reached by contemplating these 4 P's.

I. First we must formulate a proper *prognosis* based upon a complete diagnosis of the case in hand. Naturally we are obliged to make a thorough clinical examination of the whole mouth, not just the teeth involved for the prosthesis. This should include a complete radiographic examination as well as accurate study casts. For a number of years, in my office study casts were used only in extreme cases. I believe this to be a mistake and they are now employed routinely in all but the simplest cases. Often, in viewing the complete dentition from *all* angles by means of casts, the problem is considerably clarified. As for the thorough clinical examination, each operator is competent to treat this in his own way. All operative and periodontal work should be completed before proceeding with a fixed bridge restoration. It is quite possible that if the prosthetic work is performed first, the

operative work, or the periodontal treatment will reveal that another tooth or other teeth may have to be lost. This would of course change the prognosis.

II. The *purposes* to be accomplished by a fixed or semi-fixed bridge. The average patient desires a bridge either to improve his appearance or to provide better function. If we view the problem, then, from the patient's viewpoint it is relatively simple, and as such should be comparatively inexpensive. However, the purposes of a fixed bridge are not that simple, and they should be clearly explained to the patient as follows:

- a) To restore occlusion;
- b) To prevent a breakdown of the periodontal health of the remaining teeth;
- c) To prevent caries of the abutment teeth and provide adequate retention;
- d) To restore esthetics;
- e) To assist in the chewing of food.

These purposes are the essential requirements in the designing of a fixed bridge restoration.

III. The planning of a bridge is based principally upon the above purposes. It has been the conviction among many men that unless the abutment teeth are nearly parallel, a fixed bridge employing abutments at each end of the edentulous space could not be used. This, often, is not true. However, if the abutment teeth are widely divergent, then a semi-fixed bridge may be employed. A semi-fixed bridge is one in which the pontic is attached to one abutment, i.e. the retaining abutment, with a rest inserted into a proper casting on the other abutment—the supporting abutment. Bridgework employing one abutment only should not be used except in one or two rare instances: neither should fixed bridges

be constructed attached to one abutment with only a rest on the enamel of the supporting abutment. If the semi-fixed bridge is chosen, then the rest, instead of being a pad upon a gold casting or enamel surface, should be of a key-hole or dovetail design, being deeply inset and locked within the casting on the supporting abutment. The deeper the rest is inserted within the casting, the better. It should be at least 3mm. deep. This dovetail recess should be made parallel to the path of insertion of the retaining abutment, thus permitting correct insertion and cementation of the restoration.

If a tooth or teeth have been lost from the dentition for a period of a year or longer, the operator is usually confronted with the problem of teeth adjacent to the edentulous area having drifted or tilted towards the space, and the tooth or teeth opposing the space having extruded. We have stated that the prime purpose of a fixed restoration is to restore occlusion. If the extrusion of the opposing teeth is not marked then it is possible to restore the opposing occlusal plane to normal by judicious grinding of the cusps of the extruded teeth. If, however, the extrusion is considerable, then one of two paths lies open. If there is no serious periodontal involvement of the

extruded tooth, then this tooth may be ground and prepared to receive a partial veneer crown which will be constructed to the proper occlusal plane. If, however, it should have extruded to such a degree that there is a periodontal condition which cannot be treated successfully, then it should be removed and a proper fixed bridge inserted restoring the correct occlusal plane. This phase of oral reconstruction is of great importance.

Again, stressing the importance of restoring the occlusion, we usually find on abutment teeth which have drifted or tilted, that their occlusal surfaces do not make proper occlusal contact with the opposing teeth. For example, when a posterior tooth is lost, the tooth distal to the space usually contacts the opposing teeth with the distal cusps only, whereas the tooth mesial to the space usually contacts its opposing tooth only on its own mesial cusp or cusps, the distal portion of the occlusal usually being out of occlusal contact. *See Figures 1 to 5.* Consequently the attachment should be constructed so as to restore these occlusal surfaces and establish a proper occlusal plane.

Returning to the second purpose of a fixed bridge, we see that it is to prevent a breakdown of the periodontal health

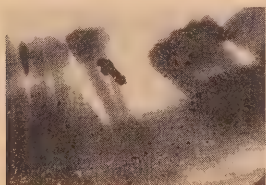


FIG. 1.

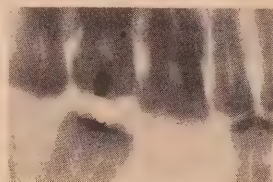


FIG. 2.



FIG. 1A.



FIG. 3.

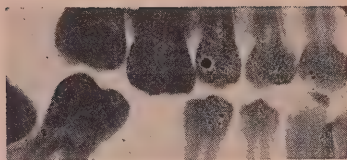


FIG. 4

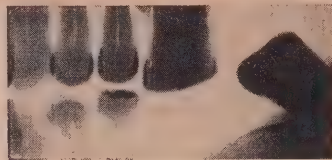


FIG. 5

of the remaining teeth. Once a tooth or teeth have been lost, gradual changes take place in the remaining dentition. These changes, as has been stated, are drifting, tilting, extrusion, all attendant with structural changes resulting in damage to the periodontal membrane and supporting alveolar bone. It behooves the dentist to restore these lost teeth just as soon as possible after their loss in order to prevent these deleterious effects.

The third purpose of a fixed bridge is to preserve the abutment teeth. There is little logic in employing an M-O, or D-O inlay, as the abutment casting when the mouth is susceptible to caries. It will be only a matter of months or at most a very few years before decay will begin on the unprotected proximal surface and undermine the fixed bridge. For example if the lower first molar is lost and a D-O inlay is used in the second bicuspid and an M-O inlay is used in the second molar, decay will likely undermine the bridge attachment from the mesial of the second bicuspid or the distal of the second molar, if the third molar is present. This is presuming the above-mentioned inadequate retention would retain the bridge under the normal stresses of mastication. Retention of the bridge and protection of the abutment teeth go hand in hand. It is accepted that a full crown offers the greatest resistance to dislodgment of any attachment. It also offers complete protection against caries and tooth fracture. Therefore, where feasible, it should be our first choice as a bridge attachment. In a mouth that is very susceptible to caries, yet where esthetics is of primary importance to

the patient, a full gold-porcelain or gold-acrylic resin crown may be used.

The next choice both from the standpoint of retention and protection, is the partial veneer crown, better known as a three-quarter crown. In using the full crown, or the partial veneer crown, we are enabled to build up the full occlusal surface to the correct occlusion, something that cannot be done when the operator uses inlays for the attachments. These two crown-type castings will take care of at least 80 per cent of all bridge abutment requirements. Where the mouth is very resistant to caries, and where there is little stress placed upon the bridge, then inlays with pin retention and well prepared parallel walls may be utilized.

The fourth purpose of a fixed bridge is to restore esthetics. While we have placed this well down on the list of purposes of a bridge, it is certainly the chief concern of the patient. To serve both the patient's desires and our own requirements, the partial veneer crown employed correctly gives admirable service. In the anterior portion of the mouth, we may use a full crown of gold-porcelain or gold-acrylic construction. Acrylic resin is used primarily for esthetics and is never used on the occlusal surface of a posterior tooth, nor on the lingual of an anterior tooth when the lingual surface is in function with the incisal edges of the opposing teeth.

The more pontics required in a fixed bridge the narrower should be their bucco-lingual width. A sound plan for a three-tooth fixed bridge, i.e. two abutment teeth and one pontic, is to have the bucco-lingual width of the occlusal surface of the pontic approxi-

mately three-quarters the width of the tooth being replaced. If there are two pontics and two abutments it is suggested that the bucco-lingual width of the pontics should be approximately two-thirds the width of the two natural teeth that are being replaced. Should double abutments be employed at one or both ends of the fixed bridge, then it is possible to increase the bucco-lingual width of the pontics should it be considered advisable.

Following the trend of thought of not unduly overloading the abutment teeth, it is usually desirable to refrain from making steep incline planes on the occlusal surfaces of the bridge. The steeper the incline planes, the greater the torque thrust upon the abutment teeth during function. We must be most careful not to overload the abutment teeth. Each normal healthy tooth can usually bear the stress of one extra tooth. This is one of the reasons why multiple abutments should be used at one or both ends of a fixed bridge when three or more teeth are being replaced.

Each bridge should be designed so that it will be as hygienic as possible. In discussing the design from a hygienic aspect there are several factors to be taken into consideration. To begin with, in order that the bridge may have as long a lifetime in the mouth as possible, every patient should be properly educated in the proper care of his mouth and especially in the care of the artificial restoration. Many patients who are meticulous about their dress or person may not know how to maintain a fine state of oral hygiene. An artificial dental restoration of the finest design may have a relatively short life-span if starchy debris and mouth acids are allowed to accumulate about it.

To-day, more than ever before, patients are demanding that bridges fulfill the requirements of esthetics. As we know, when a person smiles, the lips are drawn upwards, usually concealing the mandibular teeth and exposing the maxillary teeth. Consequently it will

be a little more difficult to meet the demands of esthetics and hygiene for the maxillary artificial restoration than for the mandibular one. However, if we keep the buccal or labial embrasures between the teeth of the bridge fairly narrow, the esthetics remain good. We must, though, make the lingual embrasures wide in order to permit thorough cleansing with the periodontal stimulator and with a correctly designed and trimmed tooth brush.

It is important that all margins of attachments terminate in areas that are easily reached for cleansing. These margins should be fine, not thick or coarse, and should have a smooth, rather than jagged or rough outline. All margins of the preparations should have a proper finishing line so that the gold casting may be finished to this outline. We should use a relatively hard gold for the castings, and in the case of the longer span bridges, only very hard golds should be employed. Otherwise, under the stresses of mastication some of these margins may become distorted with the result that food gathers about them, attacking the exposed cementing medium and leading to eventual leakage and decay.

For posterior replacements in the mandibular arch, it is permissible to use the cast pontic which is merely an occlusal restoration. A large space is left between the casting and the residual ridge. This bridge has been referred to as the so-called hygienic bridge and in no way restores esthetics. With this type of pontic a pipe cleaner may be employed as a further aid in keeping the bridge gleaming and clean.

IV. We come now to the preparation of the abutment teeth for the bridge. Besides employing a local anaesthetic it is suggested that atropine be administered to the patient to control the flow of saliva. For the average-sized adult 1/100 grain atropine sulphate, taken 1/2 hour before the appointment time is usually sufficient.

It is not our intention to deal in

gold is assuming the burden of contact in all positions. The bevel is never carried farther than function demands, as the maximum in esthetics should be maintained.

Impressions of the complete upper and lower arches should be made when the abutment teeth have been prepared. If hydrocolloid is being used as the impression material, an accurate impression is taken of the arch or arches in which the prepared teeth are located. Should one arch only be involved, then a full impression of the opposing arch is secured using hydrocolloid if desired, or for speed and economy the impression may be taken with an alginate, wax, compound or plaster of Paris. It is only necessary to reproduce the occlusal and incisal thirds of the opposing teeth. Records of jaw relation are also taken at this time and when the casts have been poured and allowed to harden, they are trimmed, inserted in the centric record and mounted on an adjustable articulator. A plain line articulator of the door hinge variety is entirely unsuitable for the construction of a fixed bridge, as there is no means of waxing-up the attachment patterns and the occlusal portion of the pontic to the balancing and working positions.

Proper protection of the prepared abutment teeth is desirable during the interval between the appointment for taking the impressions and the appointment when the finished bridge is inserted. For anterior teeth it is suggested that celluloid, or acrylic resin crown forms be used. For the posterior teeth, thin aluminum crown forms serve well. In any case the crown form is cut and trimmed to fit the prepared tooth and gingivae involved. American Dental Association formula No. 2 is mixed to a creamy consistency. The crown forms are filled with it and the open end of the crown form is covered with a very thin layer of teased out absorbent cotton fibres. This thin layer of absorbent cotton fibres should extend

to about 1/8" beyond the periphery of the open end of the crown form. The abutment teeth are dried, sterilized, and redried. The crown forms are quickly placed on these teeth and the patient is instructed to close in centric occlusion and to assume the balancing and working bites. A wet pledget of cotton is used to adapt the free ends of the cotton fibres about the gingival border of the abutment teeth, and as the cement sets the cotton fibres, with their cement coating may be tucked down into the gingival crevice to keep the gingival tissues well retracted. If desired a bland temporary cement, to which has been added a drop of eugenol, may be used instead of the A.D.A. Formula No. 2. The addition of eugenol to the cement has a sedative action and also renders it easier for the operator to remove this cement at the following appointment. These crown forms, with their cement liners, not only serve to protect the prepared teeth, but also tend to prevent extrusion of these teeth.

Once the attachments have been cast they should be smoothed and the proximal surfaces adjacent to the pontic or pontics should be highly polished, as, once the pontics have been constructed these proximal surfaces are most difficult to finish to a high degree of lustre.

The pontics may be porcelain trypontics or facings with their respective backings, or they may be constructed by the operator or his technician of plastic material with the occlusal or lingual contacting surfaces cast in a hard gold. There are several advantages to the latter technique. The pontic of plastic can be fabricated very satisfactorily to meet the demands of space and the irregularities of the ridge area as well as the demands of esthetics. It is also possible for the operator to impart a high lustre to the gingival surface of the pontic thus insuring healthy gingival tissues. Colours may be blended much

more accurately and beautifully than with the purchased porcelain pontic which must be glazed. There is much less danger of fracture or breakage of the pontic when it is constructed of acrylic resin, and it may be bonded to the cast gold much more securely than to the porcelain, which requires cementation. The bridge is finished on the master cast and dies and is ready for insertion in the mouth at the second appointment. It is usually found that a minimum of spot grinding and polishing is required.

Cementing the bridge in place is a step of paramount importance and one, which if not carried out with meticulous care, may spoil all the dentist's previous hours of work and planning. If a rubber dam is not used to isolate the area, it is suggested that atropine sulphate be administered to assist in securing a dry field. The cotton rolls must be held firmly in place, and for this purpose the Darby Cotton Roll Holder with saliva ejector serves admirably for any mandibular work. A mechanical tongue depressor, with cotton rolls in place, is also valuable when employed with a saliva ejector. In the maxilla, if the rubber dam is not used, cotton rolls placed well up in the mucco-buccal fold and held there, will be adequate when used with the saliva ejector.

Once the abutment teeth have been isolated they are dried and then sponged off with a fat dissolving solution such as carbon tetrachloride. Again the prepared teeth are dried, and then the complete crowns of these teeth and the teeth immediately adjacent are treated with a germicidal solution. One of the best solutions for this purpose is made up as follows: 1 part phenol, 2 parts beechwood creosote and 3 parts eugenol. This is dried on the teeth with a gentle blast of warm air. This solution may be used even when the cavity preparation

has extended very close to the pulp without creating any hyperaemia or tenderness. Indeed, quite the reverse effect is often encountered. Phenol followed by alcohol may also be employed. After sterilizing the prepared abutment teeth it is the practice of some operators to apply a thin mix of cavity varnish to the prepared portion of the abutment teeth. If this is done, care must be taken to insure that none of the varnish extends to the margins of the preparation.

The inner portions of the attachments are also thoroughly cleaned with carbon tetrachloride and sponged with alcohol. The complete bridge is dried and the operator is now ready to proceed with mixing the cementing medium. It is assumed, of course, that the fixed bridge has been tried in the mouth, and the occlusion and accuracy of fit checked. Should any adjustment of the occlusion have been necessary on the cast gold, it should have been accomplished and those gold surfaces re-polished to a high degree, before the cementing procedure takes place.

If any of the attachments are full crowns, then it is wise to drill a small hole through the centre of occlusal surface, in order that the excess cement may escape, and that the casting may be perfectly seated on the prepared tooth. This opening need be no larger than a No. 1 round bur or a No. 557 fissure bur. Once the cement has thoroughly set it may be removed from this opening and the cavity thus left filled completely with gold foil.

The cement itself should be mixed on a cool slab, and the powder incorporated slowly, in order that the cement will not set too fast. Each portion of the powder should be thoroughly taken up by the liquid before the next amount of powder is spatulated into the mass. Once a rich creamy consistency has been reached, the insides of the attachments are completely covered with the cement, care being taken to insure

that all margins of the tooth-side of the castings are covered and that no air bubbles are trapped in the cement itself.

One last blast of warm air is directed on the prepared teeth to remove any moisture condensation from the breath or any tiny particles of foreign matter. The bridge, with its cementing medium in place, is then quickly carried to the mouth and firmly seated in position. This can be accomplished by tapping with an amalgam plugger and gold foil mallet. This in turn is quickly followed by using a hardwood stick, or sticks, which are placed over the attachments and then having the patient occlude on these sticks with the opposing teeth. While the jaw is closed a levering action is applied to the hardwood stick in order to facilitate the final seating of the bridge-work. These hardwood sticks are meat skewers and may be procured from a local butcher and the point removed for office use. The patient is instructed to maintain heavy pressure on these wooden sticks until the cementing medium has hardened. This will take 5-10 minutes depending upon the size of the bridgework, the number of abutments, and the method of mixing the cement powder and liquid. As the reader well knows, the slower the cement powder is incorporated into the liquid and the cooler the slab and spatula, the longer is the setting time of the cement.

When the cement has set, the rubber dam, or cotton rolls and appliances for holding them and ejecting the saliva, are removed. Any excess cement is carefully chipped away and the occlusion upon the artificial appliance is checked in all positions.

There is an alternate method of cementing the fixed bridge restoration to place that also gives excellent results, with fine marginal adaption of the restoration.

As stated above, the abutment teeth are isolated, sterilized, and varnished. The cement is mixed in such a manner that it will set very slowly. The bridge is inserted, tapped to position and levered with the wooden stick. Then while the cement is still soft and the bridge held firmly in position the following steps are taken. All margins are gone over with a fine pencil stone to burnish them tightly to the tooth. Next fine sandpaper discs are used and then fine cuttle discs are employed. Once the cement has set all margins are first polished with a prophylactic rubber cup and moistened pumice. A final lustre is given with a fresh prophylactic cup and tin oxide.

Proper patient care and detailed oral hygiene is given to the recipient of the bridgework at this time. No matter how fine an example of the prosthetic art the bridge may be, if starchy food debris, calculus, and other foreign matter is allowed to gather around the bridge, its length of service will be considerably shortened because the abutment teeth will, in all likelihood, be weakened. Careful and detailed instructions in the use of the toothbrush, gum stimulator and mouth flushing are given. It is wise to have the patient bring his tooth brushes so they may be trimmed to his requirements, or to provide him with new ones of proper size and shape. The use of the brush immediately following each meal is emphasized.

A final appointment is given the patient, in order to check the bridge-work after normal functioning of the mouth has taken place and to deal with any inquiries by the patient. The occlusion is carefully examined for any highly polished facets of wear, and if found these are adjusted. Also, at this appointment the dentist is af-

fording an opportunity of checking whether his instructions in proper oral hygiene and home care of the appliance are being correctly carried out. A final prophylaxis is given and

the patient is entered upon the appointment book for a recall appointment. It is suggested that the first recall be no longer than four months in the future.

Endodontics for the General Practitioner

by SAMUEL ROSEN, D.D.S., Hamilton, Ontario

INTRODUCTION

THE writer has noted with extreme satisfaction that editors of our dental periodicals have encouraged articles on the subject of Endodontics over the past ten years with increasing frequency. That being the case, there is nothing new that can be added at this time. Rather it can be looked upon more as a review of what has already been written, because constant repetition of word and performance leads to perfection.

WHAT IS ENDODONTICS?

Endodontics is the science which deals with the treatment of pulp-involved teeth so as to make them tissue tolerant and functionally serviceable.

In the past decade root canal therapy, as a specialized branch of dentistry, has made considerable progress. The medical and dental professions are looking upon this service very favorably, because of the scientific approach to the treatment of pulp involved teeth. This is a far cry from the wholesale extraction of teeth with pulp involvements which prevailed following Hunter's history-making address in Montreal in 1910.

TREATMENT OF ANTERIOR TOOTH WITH VITAL PULP EXPOSURE

Let us assume that a patient comes into our office with an aching upper central incisor, with a large proximal cavity. Our first consideration is to relieve the pain. The cavity is there-

fore washed out with warm water, the soft carious dentine is removed with an excavator, the cavity is dried, and a dressing of chloretone and cloves is sealed in with quick-setting zinc-oxide-eugenol cement for a few days. Now that the tooth has been made comfortable, and the patient is desirous of saving it, take a radiograph with a rapid film and have your assistant develop this in the usual way, or preferably by the rapid developing process. If the radiographic interpretation shows that the tooth is a good candidate for treatment, the patient may be told that successful treatment can be instituted, providing all health factors are favourable. At this time, a complete history is taken and recorded on the patient's chart. The tooth is tested with an electric pulp tester and with heat and cold, and the results are recorded.

There are no contra-indications for a simple vital pulp extirpation according to Grossman. However, if there is an advanced periodontal involvement, the prognosis would be unfavourable, unless the pocket depth could be reduced to a near-normal condition.

FIRST VISIT

1. If the cavity leading to the exposure is not properly sealed, this may be taken care of at this time by cementing a celluloid crown, or filling with silicate or crown and bridge cement. The patient has been premedicated with gr. $\frac{3}{4}$ sodium amytal or one of the other barbiturates, to remove

fear and tension and to maintain a feeling of relaxation throughout the appointment.

LOCAL ANESTHESIA

2. Local anesthesia for pulp extirpation may be effected by infiltration of a local anesthetic into the soft tissues in the region of the root apex. This is supplemented by a subperiosteal and naso-palatine injection for deeper anesthesia. In addition, a few drops intra-septally may be added to control hemorrhage. About 2 c.c. of solution should be deposited. With the local anesthetics in use today, there should be no difficulty encountered in obtaining good anesthesia, and lasting no longer than two hours.
3. Apply the rubber dam, isolating only the tooth to be worked on, and retain with a wing clamp, Ivory No. 6 or S.S.W. No. 212. Sometimes a No. 27 premolar clamp must be used in the case of a tapering tooth. It cannot be stressed too strongly that the use of the rubber dam in root canal therapy is a MUST in order to maintain a sterile operating technique. It is the only safeguard against bacterial contamination from saliva. Apart from the necessity of insuring a sterile field, the rubber dam should be applied to prevent small instruments from falling into the mouth and slipping into the trachea or esophagus. While this is a rare possibility, Bronchoscopists have been called upon to retrieve such instruments. Sterilize the field of operation, using mercresin or tincture of metaphen.
4. Open into the pulp chamber with a small, round diamond stone, lubricated with coco-butter. The opening is made on the lingual surface, just above the cingulum, NEVER on the proximal surface, because files, reamers and broaches are made of the finest steel and will break if subjected to rotational tensions in contrary directions. After the round

stone, follow with a bi-bevel drill at right angles to the long axis of the tooth, until the pulp chamber is reached. Now change direction, using a flame bur, which will pass into the canal.

Since this is being written for the general practitioner, it might be advisable at this juncture to digress a little, in order to mention asepsis, and sterilization of instruments. In order to achieve a high degree of success in this work, (and records show that good operators approach the 95% mark and better), all instruments and dressings must be properly sterilized, either by dry heat, autoclave, boiling water, or a combination of these methods. If a Kerr root canal tray is used, this must be sterilized at least once a week, for one hour, at 325°F. by dry heat.

The following sterile items are placed in the folds of a sterile towel on the operating tray:

Mouth mirror
Serrated, grooved, cotton pliers
Plastic instrument
Small scissors
Kerr files, long handles, nos. 1 to 6
Smooth broach
Barbed broach in holder
Double-ended excavator
Cotton pellets
2 large and 2 small paper points
2 luer syringes with 25 Ga needles, one syringe containing chlorinated soda or zonite, the other 3% or 17% peroxide
Rubber stops, cut from Viceroy rubber bands

5. With the smooth broach, enter the canal and push the pulp to one side, in order to make a path for the barbed broach. Both instruments are prepared with rubber stops as measured by the radiograph. Engage the pulp with the barbed broach, and with a full turn of this instrument remove the pulp.
6. All blood must be quickly and thoroughly removed after pulp extirpation in order to prevent discoloration of the tooth. Using the chlorinated soda and hydrogen peroxide alternately, hemorrhage can usually be controlled. Always finish

the irrigation with chlorinated soda, because peroxide, being an acid, will cause irritation in the periapical tissues, with ensuing pain.

7. Dry the canal by aspirating with a 16 Ga. needle in the aspirating machine, or using paper points.
8. Attach a rubber stop to a Kerr file and take a trial-point radiograph. Record the proper length of the tooth on the patient's chart, and use this instrument for cleaning and enlarging the canal.
9. Start with a No. 1 Kerr file, long handle, and follow in succession to a No. 6 file. Never skip sizes because of the danger of creating a shoulder in the canal. Always keep the canal flooded with chlorinated soda when filing and enlarging.
10. Dry the canal with suction needle and paper points, seal in eugenol on paper point with a double seal of temporary stopping and temporary cement.
Have the patient return to the office in 3 or 4 days.

SECOND VISIT

1. Apply the rubber dam and sterilize field of operation.
2. Remove dressing.
3. Swab surface of tooth with alcohol, and dry with sterile cotton pellet.
4. Dry canal of medicament with 2 or 3 sterile paper points, cutting off ends so as not to force apex and irritate periapical tissues.
5. Take culture with 2 sterile absorbent points, allowing each to remain in canal for 1 minute. If points are not moistened with exudate, moisten with culture medium and re-insert in canal.
6. Apply label with patient's name and date, and place in incubator for 48 hours. Seal medicament—P.B.S.C. or camphorated para-mono-chlorophenol—with a double seal; inner seal of temporary stopping, and

outer seal of temporary cement. The P.B.S.C. mentioned above is the abbreviation for the polyantibiotic paste recommended by Grossman, which is used extensively by those practising Endodontics, and at present is put up in carpule form. This paste is deposited in the canal and a short, blunt paper point is inserted to insure that the paste completely fills the canal. It is a mixture of the following antibiotics: penicillin, bacitracin, streptomycin, and sodium caprylate, and these take care of all gram positive and gram negative organisms, as well as yeasts and fungi.

7. Have patient return in 3 or 4 days.

THIRD VISIT

1. Examine culture tube, and if found sterile, fill the root canal with gutta percha cones and Kerr sealer. Use a sufficient number of cones, condensing with a Kerr spreader.
2. If the culture is positive, enlarge the canal further, if necessary, irrigate with chlorinated soda and peroxide, seal in medicament with double seal.
3. Fill the root canal as soon as a negative culture is obtained. A trial-point radiograph is taken with a gutta-percha point in the canal, to make sure that it does not go beyond the apex. In vital pulpectomies, it is recommended to stay $\frac{1}{2}$ to 1 mm. short of the apex with the final filling.
4. Recall the patient in three months for a post-operative radiographic check-up to determine the condition of the periapical tissues, and again in six months, at which time a healthy lamina dura should be seen surrounding the apex.

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The Organization of Dental Seminar Programmes

by GLENN T. MITTON,* D.D.S., D.D.P.H.

LAST year the Dental Public Health Committee of The Ontario Dental Association, with the co-operation of the Faculty of Dentistry, and teaching staff, held two dental seminar programmes. This experience convinced the Committee of the value of such intensive courses to the busy dental practitioner. Means to extend this programme were sought through the federal public health grant. The Committee requested the Faculty of Dentistry to make application for such grant to provide for honoraria to staff instructors. Recently the Minister of Health, the Hon. Paul Martin, has announced the granting of this request, which provided the honoraria to staff instructors for eight such seminars during the year. The basis on which the grant is made is specifically stated as directed toward the improvement of the dental care of children, and is to be administered through the Dental Public Health Department of the Faculty of Dentistry, University of Toronto.

PURPOSE OF DENTAL SEMINARS

The dental seminar form of instruction is not new. This type of continuing post-graduate education was adopted in 1938 in the State of Tennessee. From 1946 to 1949 the Dental Division of the Department of National Health and Welfare carried on such a programme very successfully in all provinces across Canada and employed Dr. S. A. MacGregor as staff instructor in Dentistry for Children with Dr. Harry Thomson of the Canadian Hygiene Council as field work organizer for the courses. The care of the young child received great impetus

through Dr. MacGregor's work and has probably done more than anything else to stimulate an interest by the profession in this important phase of dental public health.

The purpose of such a programme of dental seminars is threefold in nature. *First* and foremost it is directed toward better dental health through the improvement of dental care for children. With the services to the public paramount and with newer knowledge and skills necessary to provide adequate dental health services to children, the dental seminar programme is designed to bring this newer knowledge and skills to the busy dental practitioner in his own community.

Secondly the programme of dental seminars offers opportunities for good public relations. During the period that the seminar team is in the community, opportunity is afforded for public health education and for a better understanding by the public of the dental health services available for children in the private dental offices. Invitations come on such special occasions to address Service Clubs, Home and School and Parent-Teacher organizations and to speak over local radio stations, and to be interviewed by the local press.

Thirdly an opportunity is given to strengthen the contacts with the local dental society and to provide stimulus to local society activity in continuing a programme of dental health education in the community.

HOW IS IT ORGANIZED?

Contact is made with officers of the local dental society outlining the seminar programme and asking for the opinions of its members as to whether they would like to be considered as

Ed. Note.—Although dealing essentially with the province of Ontario, this article, nevertheless, has great value as a guide to other provinces desiring to undertake this very worthwhile Seminar Programme.

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one of the eight centres to be visited during the year. Areas in which Health Units are operating, or in which dental health officers are employed, may be given some priority. If the decision is in the affirmative then the general seminar committee will provide for two instructors to present a two-day course, on dates which are mutually agreeable to all concerned. For a two-day course, not more than 30 dentists can be accommodated and a group of 20 is much better. The group is divided equally between the two instructors and one-half the group goes with each for one day. Instructors repeat the course content the second day. During the day, the instruction will be both didactic and clinical. In the morning round table discussion of the subject or table clinic instruction will be given. In the afternoon child patients will be used and chairside demonstration of the actual dental care being rendered in the mouth, will be given. This is the reason for the limitations of numbers, necessary in the group instruction. At the close of each day a group discussion period will be held on the work covered during the day. A dinner meeting will be held at the close of the two-day course.

HOW IS IT ADMINISTERED ?

The general seminar committee consists of representatives from the Dental Public Health Committee of the Ontario Dental Association, who initiated the seminar programme, the Board of the Royal College of Dental Surgeons, The Board of the Ontario Dental Association, the Dental Division of The Department of Health of the province and the Faculty of Dentistry.

A local seminar committee should be appointed by the local dental society and, if a Dental Health Officer is employed in the Health Unit or by the Board of Health, he should be included on the local committee.

The function of this local committee is to stimulate a 100% participation of dentists to attend, even if the

course needed to be extended another day to accommodate them. The arrangements would be made locally for two halls, where the lecture and table clinic work may be presented, and two dental offices where the clinical instruction may be given. The arrangement for child patients would be made locally on instruction as to patients needed. This is made known at least a month in advance. The local committee would arrange for hotel accommodation, necessary equipment for teaching and make local arrangements for the dinner meeting and any other local public relations events considered desirable. The local committee would provide the general seminar committee with a roster of all members to whom the programmes will be mailed in advance of the meeting. An attendance fee of Ten Dollars (\$10.00) has been set by the general seminar committee and the local seminar committee would collect this in advance of the course and remit to the general committee. The accounts for local expenses of hall rental, dinners, etc., would be presented to the general committee, who will pay all seminar expenses from the central office at 234 St. George Street.

HOW ARE COURSES FINANCED ?

Honoraria for staff instructors have been underwritten by the federal public health grant, and will be administered through the Faculty of Dentistry. The Dental Public Health Committee of The Ontario Dental Association will provide in its budget for hotel, travel and meals for the staff instructors and with the inclusion of the attendance fee, the administrative costs of programme printing, telephone and telegraph, publicity, local hall rental and the dinner meeting for those enrolled.

Of all fields of public health endeavour there is none more important to the future of our nation than that of child care. The dental care of children beginning very early in life offers

the greatest possibilities toward a condition of positive dental health throughout life. It is the purpose of these dental seminars to try and equip the general practitioner with newer

knowledge and skills to better fit him to give a health service to the child patient. This is our guarantee of better dental health for our youth and later the adult population.

Address of Immediate Past President Dr. Gustave Ratté to the Maritime Dental Convention, September, 1953.

ONE of the finest publications of the Canadian Dental Association is the booklet entitled "A Guide to Professional Conduct." It should be read by every dentist at least once a week. In the first paragraph, it is stated that the basic requisites of a profession have been established as 1) education beyond the usual level 2) the primary duty of service to the public and 3) the right to self-government.

An organized profession is composed of prospective professionals, dental students, members of the profession, the dentists, and the different organizations which are the result of the grouping of a part or the total of the professionals—in this instance the dental societies, provincial colleges and associations and our Canadian Dental Association.

The prospective student will never be a real professional if he has not an education beyond the usual level at the beginning. Education in this country is a provincial privilege and responsibility, and the provincial dental legal bodies are responsible for the degree of education of their future members.

In the past, we have seen all types of students enter the dental school. Gradually, as the science of dentistry was progressing, the pre-dental requirements also climbed, but not fast enough, to my mind. We have lived long enough to realize that our profession will survive and develop if

our future members have the best cultural background possible before entering the dental school. Dental teaching today, is consuming all the spare minutes of the Universities' programmes. The cultural background of a future dentist is very important, but even more is his character and personality as well as his qualities of heart and mind, his honesty and desire to serve.

Furthermore, the Provincial Dental representatives have expressed this year, their firm intention to accept in the profession only those who have the best qualifications. The birth of the National Dental Examining Board last June, was made possible because all Provinces agreed to this principle "that the qualifying conditions be recognized as the highest in Canada."

This National Dental Examining Board is more than an organization to grant a license, it is the proof of the good will of every Province to maintain our profession in the rank of a Health Profession, and this maintenance cannot be accomplished without the best qualified material. It is then the duty of every dentist, dental society, dental college and the Canadian Dental Association to multiply their efforts in selecting the best qualified for future dentists.

If we wish to take the lead and occupy the rank of a Health Profession not only in our Province but also in Canada, let us give to the dental school a well-prepared student. When

we entered University, we had a better preparation than our predecessors and we must not be afraid of asking more of our successors because we are provident for them. The high grade of scientific dental education which is given now in our dental schools will require from the student a high scientific preparation without which he will not be able to follow the University programme.

The Canadian Dental Association is proud of the great development of our dental schools. It is our hope that we will be able to help more in future. Every Provincial Dental Association and the Canadian Dental Association are giving much attention to the dentists who actually comprise the dental profession. It should be our ambition that each and every dentist has the characteristics necessary to a transcendent personality, a personality which we would be pleased to have ourselves and notice in the public. When I say public, I mean general public, other professional and governing bodies. Unfortunately, many dentists have not received in the past the proper general and scientific culture which help to build personalities as individuals and groups.

Our education in the past has been a narrow-minded one. We have been taught how to accomplish most of the dental techniques. "The high calling of dentistry carries a moral obligation to render service; the dentist should be ever ready to respond to the reasonable wants of his patients fulfilling these to the highest degree. He should endeavour to render the same quality of service that he would wish for himself or his family from another dentist." We must serve and we must serve well. We have learned the fundamental principles of dentistry, including the application of the basic sciences to clinical practice. We have learned the fundamental procedure in the examination, diagnosis and treatment of dental disorders, but we should remember that dentistry as a career means continuous study and

improvement. We must continue to study and improve if we are to discharge the obligation we have assumed, when we first registered as dentists.

Your presence here is a proof that none of you doubts the wisdom of continuous professional improvement and contacts. It is a moral obligation for you all to induce as many dentists as possible to be active in their professional life and to attend conventions.

There is also a responsibility which is part and parcel of any professional career, namely leadership in the society in which we live. The degree we have all received puts upon us the responsibility of a professional person, a person who has qualified and passed a discipline in the art of thinking and the science of analysis. This training should make each of us a leading citizen in his community. We will help ourselves and the profession if we contribute to the improvement of our society.

It is necessary that by our actions, our attitudes and our conduct, the layman may be able to recognize us as professional men. The real professional man develops a standard of conduct and a way of living that differs from others in his community. The professional man should be beyond the common conduct of living in the community and, furthermore, he should live for the community. In other words, the professional man should conform to habits and manners of the day in such a way as to be on the frontier of human conduct beyond that of the crowd.

Art, sciences and general culture give a distinction to any person. The long hours which a dentist spends every day to practise his profession should be followed by moments of leisure and amusement. Sports are necessary for the health of the body, but the arts, literature and science should be the delight of the mind. We should be outstanding citizens by being aware of the general trends of our way of living, and the new philo-

sophies. It is important to have a world outlook and a world awareness. Our opinions carry a weight with patients, friends and neighbors, but we do not always realize it. To discharge this responsibility, we must have good basic information. We must have comprehension, understanding, not merely in our special field, but also in the realms of the economic and political scenes in this country and abroad.

In the pursuit of the truth, the dentist, because of his background, must make use of the scientific approach, the testing, revising and holding of all matters subject to new evidence and constant examination. We must always remember that we are dealing with human beings.

May I remind you at this time, of the two last articles of our Code of Ethics which will sum up my thoughts on the conduct I would like to see adopted by every dentist in Canada.

"OBLIGATIONS TO PROFESSIONAL CONFRERES"

(a) In his relationships with his colleagues, every dentist should behave in such fashion as he would to a brother, doing and saying only things which he would appreciate from others.

(b) It is most unethical for any dentist to pass comment in judgment of the qualifications and procedures rendered by his confreres, except as such comment shall be to the mutual benefit of all concerned.

(c) In the instance of patients referred for consultation or emergent treatment, the dentist to whom they have been referred should be most cautious in his relationship to such patient, and render only such comment and treatment as has been specifically requested by the original dentist.

(d) In presenting himself to the public a dentist should do only those things which will present him as an equal of his professional brethren, except as he may be duly qualified to

practice as a specialist in his province. Hence, all forms of notices which may be construed as advertising should be avoided except:

1. The use of such sign which in its size, character, wording, and position may reasonably be required to indicate the entrance and location of the premises in which his practice is performed.

2. The use of professional cards indicating only his name, degree, office address and telephone.

3. The use of accounts and receipts.

4. The use of appointment cards and recall notices.

5. The use of announcements of the commencement of practice, change of location, or restriction of practice.

6. The use of telephone listings in the white pages of the directory to show profession, office, and home addresses, in standard lettering. In the yellow pages of the directory, the listings should be in standard small lettering only.

"OBLIGATIONS TO THE PUBLIC IN GENERAL"

(a) The subject of professional ethics deals equally with individual relationships with the public, with professional confreres, and with profession at large. Too many feel that there is one set of moral standards to be used in relation to colleagues, and an entirely different set of values in the matter of public relations.

(b) In his relationship to the public every dentist should realize the preventive as well as the restorative aspects of his profession and should seize such opportunity as may be presented to educate the public in the aims and desires of our profession, that the general dental health of all may be bettered. Such presentations must have the approval of the profession in accordance with accepted principles at that time.

(c) Because of the advantages of his education and his singular relationship to the public, in that unlike most professional men he is dealing

daily with people in their state of normal good health and emotional stability, the dentist has an opportunity to study and appreciate the interests and problems of a large cross-section of the population, and therefore should make it his duty to take an active interest in the affairs of his community.

On the National scene, one of the principal obligations of our Canadian Dental Association is to take care of the social position of our profession in our national economy. Up to now, the Canadian Dental Association having gone through a period of youth development, has done its best to maintain our profession in a good social standing, but our action has been more defensive than aggressive. Now that we have attained our majority, I think that we should act positively as a mature profession. Instead of waiting for the events which are sometimes detrimental to us, we should force the future. We should not wait for the governments and public to dictate what we should do as individuals and as a profession. If the activities and decisions of our fellow men affect us, it is quite reasonable to suggest that our actions and words as individuals and as a dental organization might affect them. We are the ones who have to set the pattern of our future life as professionals in relation with the public which receive our cares. Our desire is to maintain our liberty of practice and choice of patients and to maintain the benefits and rate of progress that have accrued under private practice and at the same time, provide for the largest distribution of preventive and treatment services.

On every general election, the matter of health insurance is brought up. Day after day, the problem is getting more serious. It is important that every dentist sings the same song on this subject. The Canadian Dental Association, representing the Canadian dentists, has taken a definite stand on the matter.

The future of dentistry is therefore not a matter of choice. It is determined by inescapable conditions. The future of dentistry must lie in prevention, because it cannot cure. There is no army of dentists strong enough to combat by any known curative methods, an ailment which affects the entire population, nor is there any sum of money available within the dreams of the sane which would meet the requirements for so enormous an undertaking. Prevention is not a choice but the sole possibility.

Along with the Health Insurance matter, the Canadian Dental Association is giving special attention to the following problems:— dental personnel, prevention of caries, dental research, public relations, economics and dental education.

I want to pay a tribute of gratitude to the representatives of the Eastern Provinces, to the Board of Governors, for their unselfish attention to the dental problems in this country.

As time goes by, dentistry occupies a larger and more important place in the health professions. With this comes an increasing degree of responsibility which must be assumed by all dentists, but particularly by those who have been elected to office. Whether or not we like it, the rise of a profession of national importance has forced upon us great responsibility and greater obligations.

I believe that time has come for our local and provincial groups to consider the organization and development of classes of dentists to study subjects in the socio-economic field of the day.

There is a change everywhere in the world and if we do not have a clever understanding of these changes and the forces behind them, we will automatically cancel all the work and efforts of four predecessors. Our right to self-government and our ability to survive and develop depends upon our enableness to adopt ourselves to the new trends in our way of living.

DR. EUDORE DUBEAU
CHARTER MEMBER AND SECOND
C.D.A. PRESIDENT

Dr. Eudore Dubeau, charter member and second president of the Canadian Dental Association died at the age of 78 years on September 25 after a lengthy illness.

Born May 16, 1875 in Quebec City, Dr. Dubeau was the son of E. J. and Camille Dubeau. He attended St. Mary's Jesuit College in Montreal, where he received a science degree, and Bishop's University where he received his degree in dental surgery. He married Yvonne Leduc in 1896 and had one son, Jean.

He founded the faculty of dental surgery in the University of Montreal in 1903, and became its first dean and director of studies. He was also appointed professor of pathological and dental surgery at the same time.

Dr. Dubeau was president of the Canadian Dental Association from 1906 to 1908 and was the secretary of the Quebec College of Dental Surgeons from 1900 until 1923. He was a member of the administrative board of the University of Montreal and a vice-president of the International Dental Federation.

Dr. Dubeau was for many years an alderman of the city of Montreal, representing the Maisonneuve ward. He was also honorary consul for Portugal in Montreal.

The French Republic bestowed on him the Officier d'Academie—1909, Officier de l'Instruction Publique — 1916,



Chevalier de la Legion d'Honneur—1925, and "Honneur et merite"—(Haiti)—1935. He was decorated Chevalier of the Order of Christ of Portugal—1936. Dr. Dubeau was Founder, First-President and Life Member of "Le Cercle Universitaire", of Montreal, and was co-founder of the University of Montreal Alumni Association.

Dr. Dubeau is survived by his second wife, the former Celine Tanguay, his son, and a sister, Mrs. Maurice Pelletier.

Research. Research is a high-hat word that scares a lot of people. It needn't. It is rather simple. Essentially, it is nothing but a state of mind—a friendly, welcoming attitude toward change. Going out to look for a change instead of waiting for it to come. Research, for practical men, is an effort to do things better and not be caught asleep at the switch. The research state of mind can apply to anything: personal affairs or any kind of business, big or little. It is the problem-solving mind as contrasted with the let-well-enough-alone mind. It is the composer mind instead of the fiddler mind. It is the "tomorrow" mind instead of the "yesterday" mind.—*Charles Kettering.*

The Forum

INSTRUMENTATION FOR JACKET CROWN PREPARATION

by CHARLES B. WALTON, D.D.S.

from *METHODICAL JACKET CROWN PREPARATION*, *Journal of the American Dental Association*, July, 1953

The following method is suggested for the preparation of an upper incisor tooth in normal alignment.

Diamond disks and wheels are used to reduce the major bulk of the tooth. Tepid water is kept running over the instrument.

1. The outline of mesial and distal slices are pencilled. These are cut with a true-running 3/4 inch or 7/8 inch flat diamond disk. Proximal shoulders are established with this instrument and the shoulders are carried through to the lingual angles.

2. The incisal angle is reduced with a 1/2 inch narrow diamond wheel, one half being reduced at a time. If the incisor is thin, it is not cut to the full depth until after the labial and lingual enamel is removed.

3. The important cuts are those which reduce the four proximal line angles and those which establish the shoulders at the proximolabial and proximolingual angles of the tooth. When there are two adjoining sound teeth, these cuts are made by a 3/4 inch or 7/8 inch cup-shaped true diamond or vulcarbo disk. Considerable water is poured over it. The inner edge of the disk is used, beginning at the incisal edge and gradually cutting to the shoulder area, so that the proximal line angle of enamel maybe removed easily without touching the approximating tooth. When use of this disk is mastered, these difficult line angles may be cut easily and the cutting of the

shoulders at the angles begun. For use on these angles, the cup-shaped disk is preferable to the small diameter, cylinder cutter which is inefficient and which creates heat. Figure 2 illustrates the use of the cup-shaped disk. The object is to reduce the enamel with as large an abrasive instrument as can be used safely and one which can, at the same time, be used to begin the shoulders in these difficult areas. This means, naturally, that the finger rests and guards for teeth, lips and tongue must be especially good.

4. Next the shoulder is established (but not finished) around the entire tooth. A thin diamond wheel of about 2.5 mm. diameter cuts the labial shoulder to the dentin from the mesial to distal angles. Then it is used to make the lingual shoulder.

5. This same wheel is used to cut a medium groove in the labial enamel to the incisal edge in order to establish the depth of labial enamel to be removed.

6. One half of the labial enamel is removed at a time with 1/2 inch or 5/8 inch diameter wheel (fig. 3, right) to remove the remaining collar of enamel incisal to the shoulder groove.

7. The lingual enamel is removed by the 1/4 inch diamond wheel, following the contour of the surface. This is finished with a small barrel-shaped carborundum wheel to prevent the formation of sharp angles.

8. A Bastian shoulder cutting wheel

is used (right-angle style held in the straight handpiece) to raise the shoulder beneath the free gingiva on the labial side.

9. A thin tapered cylinder mounted point with square end, preferably an extremely fine grit, is now used to hone all the axial walls, to reduce

sharp axial angles and to straighten the shoulder.

10. A no. 600 plain fissure bar is then used to sharpen the shoulder after which it is filed with end-cutting Bastian files.

11. The preparation is polished with lubricated fine-grit paper disks.

PENTOBARBITAL SODIUM: APPRAISAL OF ITS USE IN ORAL SURGERY

by JOHN T. KELLEHER, D.M.D., Hartford, Conn., and
JAMES B. GRIFFIN, D.D.S., Torrington, Conn.

Condensed from Journal of Oral Surgery — Vol. 11, July 1953, No. 3, American Dental Association.

Pentobarbital is ethyl (1-methyl butyl) barbituric acid. It belongs to the group of short-acting barbiturates, has a relatively high safety ratio and is effective quickly in small dosages.

There is no average dose of pentobarbital sodium. It must be administered slowly, at approximately the rate of 1 cc. per minute, and it must be remembered that the greatest depression occurs about ten minutes after the drug has been injected. A conversation should be carried on with the patient while the drug is being given. In this way the gap between consciousness and unconsciousness can be anticipated and the drug can be stopped at the proper time.

Clinical Application

The 5 per cent solution which comes in 50 cc., sterile, multiple-dose, rubber stoppered bottles is recommended. This solution contains 10 per cent alcohol and 20 per cent propylene glycol as preservative and stabilizing agents. It contains 50 mg. of pentobarbital sodium per cubic centimeter of solution (or $\frac{3}{4}$ grain) but this can be diluted by adding distilled water to the desired amount.

The amount of solution used at one session in our office routine never exceeds 5 cc. of the 5 per cent solution.

A 5 cc. syringe is filled with the solution and this syringe is connected to a needle already in the vein through which 1/150 grain of atropine sulphate had been given intravenously.

The pentobarbital sodium solution is then administered in slow fractional doses at about a rate of 1 cc. per minute. A conversation is carried on with the patient. After 2 to 3 cc. has been given, the patient's speech becomes very slurred and sluggish. Generally the administration of 2 to 3 cc. will be sufficient. In more robust or highly excitable patients, however, it is necessary occasionally to administer a greater amount, that is, up to a maximum of 5 cc.

The intravenous injection is discontinued when the patient becomes drowsy. Then the nitrous oxide-oxygen anaesthetic is administered in the routine manner. Generally anaesthesia can be maintained with a much higher percentage of oxygen in the gaseous mixture, and there will be little or no excitement or muscular rigidity on the part of the patient during induction.

After the operative period, the patient regains consciousness quickly and there is rarely any nausea or vomiting. The patient is put in a recovery room to rest and usually he is ready to leave the office in approximately half an hour.

MOUTH RINSING

by FRANK G. EVERETT, M.S., D.M.D., M.D., and M. MONTE BETTMAN, D.M.D., F.A.C.D.

Condensed from Oregon State Dental Journal

It has been stated correctly, that rinsing one's mouth has an important and definite place in oral hygiene, just as the use of toothbrush and of dentifrice. The following technique is suggested to those patients that have suffered some shrinkage of the interdental papillae. However, vigorous mouth rinsing is an important measure of home care in people of all age groups, with and without periodontal disease. After thorough brushing of the teeth, the patient takes a small sip of water into his mouth. Next he is instructed to close his mouth with his teeth kept apart slightly. Both upper and lower lip are then curled tightly around the incisal edges of the upper and lower teeth respectively. Next, the water is forced from the cavum oris proper through the interdental spaces between the front teeth into the vestibulum by expelling it with the tip of the tongue, which is raised almost to the palate. At the time of expulsion of the water a slight approximation of upper and lower teeth occurs, which serves to increase the pressure in the cavum oris proper. The water is then returned from the vestibulum again through the interdental spaces to the cavum oris proper by the contraction of upper and lower lip, and then alternately flushed back and forth through the interdental spaces of this region by the coordinated movement of lip and tongue. Different areas of the mouth are rinsed in the same manner by raising to the palate the part of the tongue adjoining the area to be flushed, and thereby expelling the water through the interdental spaces; this is again followed by rinsing back

and forth through coordinated interplay of lips, cheeks and tongue. The entire mechanism is similar to the one used by some people who blow air through their interdental spaces. As a matter of fact, it is easiest to teach this method of mouth rinsing to the patient by demonstrating and practicing first with the use of air, and next only with water. The patient is then asked to finish rinsing his mouth by the customary flushing of water from cheek to cheek; this part of the rinsing procedure will help in clearing loosened debris from the buccal, labial and lingual surfaces. We then request the patient to spit out, to take another small sip of water, and to repeat the rinsing procedure.

It is our opinion that tap water of mouth temperature is all that is required. Except in conditions of established pathology, no medication is necessary. We wish to warn particularly of the indiscriminate and long-continued use of hydrogen peroxide solution and most other oxygen liberating drugs for purposes of mouth rinsing in home care; such abuse may lead to sponginess of the gingivae, the formation of a hairy tongue to decalcification of tooth substance and, in our experience, to hypersensitiveness of exposed root surfaces. Patients suffering from necrotizing ulcerative gingivitis who are given oxygen liberating drugs to be used as mouth wash in dilute form for home care during the period of treatment should be specifically instructed to discontinue the use of this drug, after healing, that is after two weeks at the most.

THE PULP — AN ALLY IN THE PRESERVATION OF YOUNG PERMANENT TEETH

by H. A. ZANDER, M.S., D.D.S., F.A.C.D.

*Condensed from the Journal of the California State Dental Association
and the Nevada State Dental Society, May-June issue, 1953.*

The most common cause of inflammation of the pulp is dental caries. Acid is formed by bacterial action during this disease process. Bacterial proteolysis occurs. These, and other metabolic products of the microorganisms, are the irritants which produce the inflammatory pulp response. If this process occurs slowly, the inflammatory signs are so mild that they will not be detected clinically, and before long the pulp will have erected its dentine block. In the adult tooth, wear and the constant deposition of secondary dentine and the shift of cellular to fibrous predominance have slowed down both the penetration of the irritants from dental caries as well as the inflammatory response of the pulp. This is not the case in the young permanent tooth. Therefore, both the progress of the irritation from caries and the inflammatory response are much more marked. The best procedure, then, to preserve young permanent teeth from the ravages of dental caries is the early detection of the caries lesion.

If caries has progressed beyond its early recognition and an inflammatory reaction of the pulp is present, the removal of the majority of the irritants and the placement of a neutral or alkaline dressing in the cavity will allow the defense mechanism of the pulp to overcome the caries irritants, erect its block, and remain vital.

If caries has progressed so far that the pulp is exposed, the young permanent tooth can still often be preserved. This is of extreme importance root canal treatment. Under proper conditions a material like calcium hydroxide is capable of initiating a differentiation of the undifferentiated mesenchymal cells into new odontoblasts which prompt the formation of new dentine, bridging over the gap

that has occurred through the pulp exposure. It is essential that the calcium hydroxide, mixed to a paste with distilled water be placed over the exposed pulp and in contact with it, followed by zinc oxide and eugenol, a cement base, and the amalgam restoration in one sitting.

Calcium hydroxide definitely appears to be the material of choice. Experimental evidence other than clinical for a healing of the pulp is available only for calcium hydroxide. Many cements used in dentistry, especially silicate cements, are highly irritating to the pulp. Calcium hydroxide that is used for pulp capping, when placed underneath these cements, will counteract the acidity and prevent pulp irritation from these materials. Calcium hydroxide has been incorporated in a liner and is also effective in this combination when there is not enough room for a base in the cavity preparation.

Most of the drugs used in operative dentistry are protein coagulants like phenol and silver nitrate. It has been shown that the young permanent tooth will allow these drugs to penetrate all the way through the dentine into the pulp. The pulp injury is usually very mild and it will soon recover from such an injury, unless the cavity is very deep and the extent of penetration into the pulp is greatly increased. None of these substances produces a block in the dentine tubules. On the contrary, the apparent shrinkage that occurs from the coagulation of the odontoblastic processes allows for easier penetrability of substances that may be placed into the cavity after the application of such drugs. Therefore, discretion should be used in the use of these drugs in the young permanent teeth.

ANNOUNCEMENTS

● **NUTRITION PHOTOGRAPH CONTEST.** The Nutrition Division of the Dept. of National Health and Welfare is sponsoring a nutrition photograph contest. This contest is now open and will run until November 30th, 1953. Because of the relationship between nutrition and dental health it is possible that some dentists may be participating in a nutrition project which they would like to enter in this contest. Rules are obtainable from the Nutrition Division, Dept. National Health & Welfare, Ottawa.

● **C.D.A. PENSION-ASSURANCE PLAN.** The Pension-Assurance Plan hitherto available to members in nine provinces, but not the Province of Quebec, will now be available through special arrangements to the Members of the C.D.A. living in that Province. Enquiries should be addressed simply to—

Mr. E. L. R. Williamson,
Post Office Box 70,
Brockville, Ont.

● The **SECOND INTERNATIONAL DENTAL CONGRESS** in Mexico City sponsored by the Mexican Dental Association, will be held Nov. 15-21, 1953.

UNIVERSITY OF TORONTO, FACULTY OF DENTISTRY CONTINUATION COURSES FOR GRADUATES IN DENTISTRY

PAEDODONTICS—November 23-25, 1953. 9.00 a.m.—5.00 p.m. Enrolment limit 12. Fee \$50.00.

DENTAL RADIOLOGY—November 30-December 4, 1953. 9.00 a.m.—5.00 p.m. Enrolment limit 12. Fee \$75.00.

PERIODONTICS—January 18-22, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 14. Fee \$75.00.

OPERATIVE DENTISTRY—February 15-19, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 10. Fee \$75.00.

ENDODONTICS—March 8-12, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 8. Fee \$75.00.
ORTHODONTICS (for the general practitioner)—April 5-9, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 10. Fee \$75.00.

PERIODONTICS—April 26-30, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 14. Fee \$75.00.
DENTAL ORAL SURGERY AND ANAESTHESIA—May 3-7, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 12. Fee \$75.00.

Please address inquiries to: The Dean, Faculty of Dentistry, University of Toronto, 230 College Street, Toronto 2-B, Ontario.

● **THE ACADEMY OF DENTISTRY, TORONTO** announces its annual Winter Clinic of the Academy will take place on Thursday, November 26th, at the Royal York Hotel.

● **THE AMERICAN ACADEMY OF DENTAL MEDICINE** will hold its annual Mid-Winter Meeting and Luncheon at the Hotel Statler, New York City, on Sunday, December 6, 1953, 12:30 p.m.

From 2 p.m. to 5 p.m., following the Luncheon, there will be a symposium on **GERIATRICS**, discussed by Professor Alonzo F. Myers of New York University, Dr. Henry M. Goldman of Boston, and Dr. C. Ward Crampton of New York City, with Dr. Joseph I. Echikson of Newark, N.J., acting as moderator. For reservations and program address the National Secretary, Dr. William M. Greenhut, 124 East 84th Street, New York 28, N.Y.

● A one-day Workshop on "**OCCUPATIONAL ORAL-HEALTH IN GENERAL DENTISTRY AND PUBLIC HEALTH**," sponsored by the First District Dental Society of New York with the collaboration of the Postgraduate Medical School, Institute of Industrial Medicine, New York University, will be held on Friday, January 22, 1954, at the Hotel Statler, New York City.

Members of the health professions are cordially invited to attend all sessions. Admission is free. For registration forms write to Public Health Workshop, First District Dental Society, Hotel Statler, New York 1, N.Y.

● **THE ASSOCIATE COMMITTEE ON DENTAL RESEARCH** offers one Senior Dental Research Fellowship of an annual value from \$3000 to \$5000.

This award will be granted only to a Canadian citizen who has had several years postgraduate training and has demonstrated his capacity for independent investigation.

Address all correspondence to: The Awards Officer, National Research Council, Ottawa, Canada.

● If you have, or know of a neighbour who has a good, used hearing aid, donate it to the **NATIONAL SOCIETY OF THE DEAF AND THE HARD OF HEARING**, 2 Bloor Street East, Toronto, Canada, for the use of some hard of hearing person who cannot buy one.



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Editorial

THE BOARD OF GOVERNORS — HOW IT FUNCTIONS

Most large businesses or corporations are guided in their policies and actions by a Board of Directors responsible to the shareholders. The Canadian Dental Association through its Board of Governors conducts its affairs in much the same fashion because this Board too, is responsible to the shareholders—in this instance the Membership of the Association.

The Canadian Dental Association is comprised of ten corporate membership bodies—one in each province—and the members of each corporate group are joined in a national way through the Canadian Dental Association. The Board of the Canadian Dental Association is composed of elected delegates from each corporate member on a proportionate basis forming a panel of fourteen and once a year in conjunction with the annual convention of the Canadian Dental Association this Board meets to pass judgment upon the past performance of the various committees or councils and to give direction to future policies affecting the profession and the people it serves.

The Governors of the association are the only ones with voting privileges at this annual meeting but another very important group is also in attendance to give its wise counsel in the attendant discussions. The chairman of the various standing committees and special committees of the association are vital to the intelligent discussion of matters before the Board because these individuals representing, as they do, the members of the committees have been the ones most closely associated with the activities of the Canadian Dental Association through the year. The aggregate of the knowledge and experience of the group is of inestimable value when consideration is being given to the various aspects of Canadian dental affairs.

It was unfortunate that a greater number of Canadian dentists could not have been present at the annual meeting held this year from October 14th to 17th in Montreal. From the time of the Invocation by Monsignor Georges Deniger at 2:00 p.m. Wednesday to the final amenities on Saturday afternoon at 5:30 approximately thirty-five hours were devoted by each man in attendance to the

hearing and discussion of reports and the formulation of policies respecting them.

If anyone has any doubt about the thoroughness of the methods evolved in respect to the guidance of Association affairs it should be dispelled. Each report is given consideration not once, but two times during the four day meeting. Following certain official procedures, adoption of agenda, President's report, necrology report, and By-Laws and Resolutions presentations, the members in attendance are appointed to Reference committees to study in minute detail the reports assigned to these committees. Reference committee number one studied the reports of the President, Secretary, Convention, Ethics, and Specialists and Specialization committees and the Orthodontic Section. Reference committee number two was charged with reports of the Education, Research, Hospital Dental Services, War Memorial Award, and Library committees. The Executive, Finance, Housing, and Publications reports were delegated to Reference Committee number three and Reference committee number four directed its attention to the reports of the Committees on Public Relations, Health Insurance Studies, Dental Public Health, Auxiliary Services and Legislation. Each of these reports was studied in minute detail in the Reference committees and in turn reports on the reports were brought before the board for further consideration. One could not help but be impressed with the voluminousness of service being rendered to Canadian dentists by a few of their confrères. These individuals by sacrificing time, money and recreation, are giving of themselves so that an organization can function for the betterment of dentistry in all its aspects. These dentists merit the appreciation and support of the membership-at-large.

From time to time *The Journal* should discuss many of the ramifications of this recent meeting and such is its intention. However, one history making resolution, receiving the unanimous approval of the Board is of such paramount importance that its content should be made known immediately. With the amount of erroneous speculations posed both privately and publicly by many individuals relative to the Fluoridation of Communal Water Supplies it is heartening to be able to report the following approved resolution:

Whereas tooth decay, by affecting the vast majority of people in Canada has come to be recognized as one of the major public health problems of our time,

And whereas many thousands of Canadians and millions of people elsewhere have consumed during their total lifetimes, water fluoridated to approximately one part of fluoride to a million parts of water from underground deposits, and have thereby benefited by a reduction of about two-thirds in the attack rate of tooth decay without any ill-effects discoverable by either the dental or medical professions,

And whereas the effects of adjusting the fluoride content of communal water supplies to approximately one part per million have been studied extensively in their dental and medical aspects for more than eight years, revealing in every instance the same beneficial dental health results that have been known for over 20 years to accrue from consuming water fluoridated from underground deposits, and with the same freedom from any systemic ill-effects,

Therefore be it resolved:

That the Canadian Dental Association recommends to the people of Canada that communities having a public water supply, adopt a procedure for water fluoridation best suited to their local needs, and for this purpose seek competent dental, medical, and engineering advice.

If the Board of Governors had not been able to agree on one other problem relating to dentistry its time was still well spent in formulating and approving the above resolution. This official recommendation will undoubtedly do much to strengthen the hand of public health workers and others who are striving to encourage the adoption of this most worthwhile public health procedure.

Yes, the affairs of the Canadian Dental Association are in sound and capable hands. The continued and increasing co-operation and support from the members of the profession will permit the policies and services both by and for this Association to reach fruition.

ROYAL CANADIAN DENTAL CORPS NEWS

Her Majesty the Queen has approved the operational award of Member of the Order of the British Empire (M.B.E.) to Major G. R. Covey, C.D. Major Covey, M.B.E., C.D., 34, of Toronto and Ottawa, joined the Royal Canadian Dental Corps following his graduation from the University of Toronto in 1941. During the Second World War he held various appointments in Canada. He joined 25th Field Dental Unit, R.C.D.C. in April 1952 and served as officer commanding the unit until April 1953. He is now serving with 13 Company R.C.D.C. and is stationed in Ottawa.

The citation follows:

"Major Covey served as officer commanding 25 Canadian Field Dental Unit in Korea from April 1952 until April 1953. The high standard of dental service achieved by the various detachments under his command is attributed largely to the painstaking efforts of this officer throughout his service in the theatre. He has shown outstanding qualities of organization and energy and a keen awareness of the responsibilities of his service in providing the highest possible standard of dental care for Canadian troops at all times. He showed a cheerful approach to all problems, maintaining a calm and unruffled demeanour no matter how difficult the circumstance, and his ready cooperation proved of inestimable value on many occasions. This officer visited all Canadian units frequently and regularly, ensuring by personal liaison that his service was always prepared to cope with the needs of changing conditions and changes in unit dispositions as dictated by operational commitments. The success achieved by the dental service in this theatre is a tribute to his outstanding work."

Army Headquarters have announced that Major Howard A. Ferguson has been Mentioned-in-Despatches for outstanding service in Korea, with the 25th Canadian Infantry Brigade.

Major W. M. Sinclair of Ottawa and Halifax has been promoted to the rank of Lieutenant-Colonel and appointed Senior Operator, 12 Company Halifax.

Lieut.-Col. Sinclair was born in San Luis Potosi, Mexico. His early and pro-

fessional education was received in London, England, where he received the degrees of L.D.S., R.C.S. Eng., in 1930 and B.D.S. in 1931 from the University of London. He served on the staffs of the Eastman Dental Clinic, London, England, and the Dundee Dental Infirmary. Lieut.-Col. Sinclair served in the Canadian Forces from 1940, initially with the Irish Regt. of Canada, transferring to the Royal Canadian Dental Corps in 1943 where he was employed in the Halifax area for the duration of the war. Since hostilities, Lieut.-Col. Sinclair has served both ashore in Canada and afloat with H.M.C.S. Warrior and H.M.C.S. Magnificent. In 1951, he attended the course in Advanced Dentistry at the U.S. Army Medical Dental Research and Graduate School, Washington, D.C., following which he has been employed as an instructor at the R.C.D.C. School.

Lieut.-Col. Sinclair is married and has two sons attending Dalhousie University.

The Director General of Dental Services addressed the Northern Ontario Dental Association at New Liskeard, September 11th. He also attended the Eastern Ontario Dental Convention and the American Dental Association Convention in Cleveland.

Lieutenant-Colonel G. B. Shillington, Commandant, the R.C.D.C. School, attended the American Denture Society Meeting in Cleveland, prior to the American Association Convention.

Colonel R. E. Carroll, E.D., C.D., Deputy Director General of Dental Services (Air) inspected dental units serving Canadian Forces in Europe, including the 27th Infantry Brigade Group and the R.C.A.F. Air Division.

"I am most pleased with the situation over here," Col. Carroll said. "Canadian soldiers and airmen abroad have available the most modern dental services ever accorded our overseas forces.

"Field exercises over here offer military training advantages for Dental personnel that are not generally available in Canada."

Lieutenant-Colonel W. M. Sinclair presented a paper on "Maxillo-Facial Procedures for the General Practitioner" at the Eastern Ontario Dental Association Convention.

Doctor I. A. C. MacDonald of Halifax has been appointed Captain in the R.C.D.C. Captain MacDonald is serving with 12 Company at Camp Aldershot, N.S.

Officer Cadet R. C. Riggs, of Montreal, has returned from summer training with 27 Canadian Field Dental Unit in Europe.

"I had a most interesting summer," said Riggs, who is continuing his training in the Dental Faculty of McGill University and expects to serve with the Royal Canadian Dental Corps on graduation.

CANADIAN DENTAL ASSOCIATION NEWS

FROM THE OFFICE OF THE SECRETARY

Conference on Dental Education at Saskatoon. Representatives of the four western provinces (British Columbia, Alberta, Saskatchewan, and Manitoba) met at Saskatoon on September 9th last in order to discuss the need for increasing teaching facilities in dental education. The universities were represented at the conference by the president in each case. Provincial Departments of Health and Education sent representatives and each provincial dental board was represented. The C.D.A. was represented by the President and Secretary, the Department of National Health and Welfare by the Director of Health Insurance Studies and the Kellogg Foundation by Dr. P. Blackerby. Dr. Grant was invited to attend in order to present the system devised by the Southern States in order to facilitate professional education.

Presentations were made by the various representatives, all of which pointed out the need for an increased number of dental graduates in order to supply the needs of the Western provinces. The conclusion was reached that these provinces require, at least, 100 new graduates each year. At the present time the teaching facilities of the area, as a whole, supply a maximum of 30 graduates per annum. In addition the need for the establishment of courses in dental hygiene was confirmed.

The conference brought together authorities from the four provinces who, by their positions, are most concerned about the need for dentists and the training of dentists. All expressed concern and stated that solution must be found in the immediate future. As a result of the conference certain suggestions were formulated advocating expanded facilities at the University of Alberta in order to accommodate more students and for the establishment of a course in dental hygiene and the establishment of faculties at University of British Columbia and University of Manitoba.

This conference was made possible

through the generosity of the Kellogg Foundation.

Fluoridation Spreads rapidly in U.S. As of September 1st the American Dental Association reports that 784 communities are fluoridating water supplies. The overall population served in these municipalities is reported to be 15,289,665.

The Anti-Enzyme Dentifrices. During recent years a series of unwarranted claims have been made for various ingredients in dentifrices. Dentifrices containing various ingredients have been advertised profusely as possessing almost miraculous value. The campaign is hardly finished for one when a great new discovery is announced through large scale advertisements. The most recent of these is the "Anti-enzyme" dentifrice, claims for which are unwarranted. According to the Aug. 20th issue of the Wall Street Journal, the advertising campaign of one pharmaceutical company manufacturing "Anti-enzyme" tooth paste originally scheduled for one million dollars for September, October and November was boosted to two million dollars.

In an editorial of the September Issue, The Journal of the American Dental Association made appropriate comment: "There is no acceptable evidence to date demonstrating that the daily use of such a dentifrice will prevent dental caries although studies on the subject are being made. Dentists, of course, will wisely withhold judgment of the product until scientific evidence proves its worth or its worthlessness and it is hoped that the intelligent consumer will do likewise."

Dr. A. E. Rowlett of England Dies. Dr. A. E. Rowlett of Leicester, England, Honorary President of the Federation Dentaire Internationale, died Sunday,

Sept. 13th. Dr. Rowlett was well-known throughout the world for his world-wide activities in dentistry. He was particularly well-known in Canada owing to his many trips to this country in the interests of the profession.

Dr. Rowlett was formerly president of the F.D.I. and dental consultant to the World Health Organization. He served as president of the British Dental Association, the British Oral Surgeons Club and the European Society of Orthodontists. He was a Fellow of the Royal College of Surgeons of England and served as consulting dental surgeon to the Leicester Royal Infirmary. Following his graduation in 1899 he began serving his profession and continued to do so with remarkable merit up to the time of his death. He was in attendance at the Annual Meeting of the F.D.I. held in July last at Oslo. In his passing the profession has lost an ambassador of good-will.

Announcement of Albert Joachim International Prize. On the recommendation of the Association Générale des Dentistes de Belgique, the Belgian Dental Profession wished to commemorate the 50th professional anniversary of Dr. Albert Joachim, one of the most eminent members of the Dental Profession in Belgium.

In accordance with the express wish of Dr. Joachim, a Foundation to encourage scientific research in Odonto-Stomatology has been formed and the Administrating Committee of this Foundation was of the opinion that one of the best ways of fulfilling its aims was to award a prize for research work.

It was decided to allocate a large proportion of the funds collected to a national and international prize.

The Federation Dentaire Internationale at its Annual Meeting in Oslo, July 1953, decided to accept the invitation of the Foundation Committee to be responsible for the awarding of the International Prize, in consideration of the eminent service rendered on an international plan by Dr. Albert Joachim, who for forty years has been the Belgian representative to the Federation, showing at all times unremitting interest and co-operation.

Dr. Joachim, who is an F.D.S., (Eng), is one of the Vice-Presidents of the Federation Dentaire Internationale and it gives the Federation great pleasure to join in the tribute given to its eminent colleague.

The first award of the Albert Joachim International Prize, which will be made at the XIIth International Dental Congress in Rome, 1957, will amount to 50,000 Belgian francs.

It will be awarded by a Jury appointed by the Council of the Federation Dentaire Internationale for the best purely scientific research in the field of Odonto-Stomatology.

Attention is particularly drawn to the fact that only strictly **original** work will be considered, that is personal research by the author which has not yet been published.

Since the General Assembly of the Federation Dentaire Internationale has asked the Council of the Federation to make certain amendments to the rules of the competition, these will have to be published later.

Anybody interested in the prize can for the moment write to the Secretary General of the Federation, Dr. G. H. Leatherman, 35, Devonshire Place, London, W. 1, who will give them all the information they require.

Additions to the Library

EMORY, F. H. M. Public health nursing in Canada. Rev. ed. 1953. 397p.

Le CRON, L. M. Experimental hypnosis. 1952. 483p.

MARTENSSON, G. Dental injuries following radical surgery on the maxillary sinus. 1950. 74p. illus.

OSTLERE, G. Trichlorethylene anaesthesia. 1953. 83p. illus.

PINNER, M., and MILLER, B. J. When the Doctors are patients. 1952. 364p.

SCOTT, J. H., and SYMONS, N. B. B. Introduction to dental anatomy. 1952. 292p. illus.

SMITH, D. T., and CONANT, N. F. Zinsser's textbook of bacteriology. 10th ed. 1952. 1012p. illus.

WINTER, L. Textbook of exodontia by Leo Winter. Rev. by W. F. Harrigan and Leo Winter Jr. 6th ed. 1953. 350p. illus.

NEWS FROM THE PROVINCES

NOVA SCOTIA

Dr. P. S. Christie, of Halifax, was elected president of the **Nova Scotia Dental Society** at the annual convention which ended Saturday, Sept. 5th.

The gathering was a Maritime Dental Association one and delegates attended from Nova Scotia, New Brunswick, Prince Edward Island, United States, Ontario and other points.

Dr. Hardy Parker, of Sydney, retiring president of the provincial association, was convention chairman.

Other officers of the provincial association are: Senior Vice-President, Dr. A. D. MacGregor, Truro; Junior Vice-President, Dr. L. B. Layton, Annapolis Royal; Secretary-Treasurer, Dr. A. B. Haverstock, Halifax; Executive Members, Dr. Lou Archibald, Halifax, Dr. Hardy Parker, Sydney.

Associated with Dr. Parker in conducting business meetings as honorary chairman; Dr. G. D. Barrett, secretary-treasurer; Dr. G. D. Barrett, secretary-treasurer; Dr. M. Claener, Sydney; Dr. G. W. Caldwell; Dr. Len Israel, Dr. C. A. Sullivan, Dr. John Burke, Jr., Dr. E. F. Dexter, Dr. George C. MacLeod, Dr. Sydney Florian, Dr. Eric Jardine, Dr. A. H. Ervin, Dr. Harry Dubinsky, who was entertainment committee chairman.

Special speakers included Leo Dolan, director of the Canadian Travel Bureau, Ottawa; E. L. R. Williamson, administrator of the Canadian Dental Association Pension-Assurance Plan; Dr. Irving R. Hardy, New York; Dr. Vincent Tremblay, Montreal; Dr. Floyd D. Ostrander, Professor of Dentistry, University of Michigan, and others.

Dr. Parker, who was in charge of arrangements for the convention, said cooperation and able assistance of Keltic Lodge's manager, Fred Irwin, was a major factor in making the convention a success.

SASKATCHEWAN

The results of the recent election of the **College of Dental Surgeons** returned Dr. Fred Smith of Saskatoon and elected a new member in Dr. W. R. Watchler of Yorkton. The remaining members of the Council are Drs. W. F. Hancock of Fort Qu'Appelle, J. P. White of Swift Current, and R. D. Reid of Prince Albert.

The members of the Saskatchewan Association appreciate the valuable contribution made by the retiring member from the Council, namely Dr. Duff Leask of Moose Jaw. We extend a sincere welcome to Dr. Watchler and congratulate Dr. Smith upon his re-election to the Council.

Saskatoon Dental Society

In August, the Society was treated to a clinic on "The Use of Hydrocolloids in Operative Dentistry," by Dr. R. C. Lindley, F.I.C.D., Seattle, Wash. Dr. Lindley was a clinician at the W.C.D.S. Convention in Jasper last June. He very kindly

offered his presentation to the Saskatoon Society as he was visiting relatives here. It was a very fine gesture on his part and his excellent presentation was well received.

The September meeting was a very auspicious one for the Saskatoon men. It was our privilege and pleasure to have as guests Dr. Ratté and Dr. Gullett of the C.D.A., representatives from the Provincial Departments of Health, Provincial Colleges of Dental Surgeons, Dr. Blackerby, of the Kellogg Foundation, Battle Creek, Michigan, Dr. Grant of Atlanta, Georgia, of the Southern Regional Education Board and Dr. Jackson of the National Department of Health and Welfare, who were attending the meeting on Dental Education. This meeting to consider the question on Dental Education in Western Canada was sponsored by the Kellogg Foundation. The Presidents of the four Western Universities planned the organization of the meeting since they are fully cognizant of the serious situation that exists.

Welcomed to the membership of the Society was a new member, Dr. R. Locke, who graduated in June 1953, Faculty of Dentistry in Toronto. Dr. Locke had the distinction upon graduation of receiving the Scholarship award for General Anesthesia. He is practising with his father Dr. S. Locke.

Regina Dental Society

The Society commenced the season with the organizing and naming of committees for the Convention of the Western Canada Dental Society to be held in Regina in June 1955. General Convention Convener is Dr. Oliver Brett, the Secretary is Dr. Ken Martin and the Treasurer is Dr. B. Bookhalter.

Under discussion was the possibility of using Federal Grants for the purpose of subsidizing the expenses of Clinicians for the Saskatchewan Dental Association. The Society strongly supported the claim of the association in this regard.

Dr. Oliver Brett reported on his attendance at an Anti-Fluoridation League meeting and the claims of this league. He attended as a private citizen to learn about their operations. He was firmly impressed that this league presents potential obstacles to the plan for commercial fluoridation of the water supply.

Dr. E. McDiarmid presided at the meeting and extended a welcome to a guest, Dr. J. Allen of Weyburn and a particularly warm welcome to a new member of the local society in the person of Dr. Henry Kinzel.

L.B.H.

ALBERTA

The first fall meeting of the **Edmonton and District Dental Society** was held in the MacDonald Hotel on October 6th. The main address of the evening was given by His Worship Mayor William Hawrelak. He spoke on "Problems of Civic Administration."

Dr. J. C. Ward presented a report on the recent convention of the Western Canada Dental Society and he was thanked on behalf of the group by Dr. Vic Lloyd for the splendid success of the gathering.

Dr. H. R. MacLean reported on the recent meeting held in Saskatoon, to discuss the acute need for more dental students and facilities for training them.

Dr. Art Rooney, reported on the latest developments of the Alberta Dental Association's investigation of a Dental Legal Protective Association.

Dr. William Orobko, President of the Edmonton and District Dental Society presided at the meeting.

B. M. M.

BRITISH COLUMBIA

Dr. William Miller represented the **College of Dental Surgeons of B.C.** at a meeting held recently in Saskatoon to consider the shortage of dental services in Western Canada. Attending were the presidents of the four western universities and representatives of the provincial dental colleges or associations, and also the departments of health and education.

These resolutions were formulated:

1. Western Canada must plan for at least 100 new graduates per annum.
2. The University of Alberta should increase its capacity from its present 35 to 50.
3. A Faculty of Dentistry with a capacity of 40 should be established at the University of British Columbia.
4. A Faculty of Dentistry should be established at the University of Manitoba with a capacity of 30.
5. Schools of Hygiene should be included in the new faculties, and a School of Hygiene should be established at the University of Alberta.

On September 17th at the **Annual Fall Golf Day** of the Vancouver and District Dental Society Dr. A. H. L. Campbell was the winner with a 79 for the 18-hole route at Burquitlam Golf Course. Dr. Dick Butler won low net honors with a 70. Other good gross and net shooters were Drs. Gordon Booth, Allan MacPherson, Bob Davis and Paul Rondeau. Dr. Sam Moscovich crashed golf's exclusive

hole-in-one club. He aced the third hole with a seven iron.

The **Dental Health Committee** of the B.C. Dental Association, under the chairmanship of Dr. Arthur Poyntz, has formulated a plan for the administration of welfare work for children whose parents are in receipt of social assistance and who are less than nine years of age. Dental treatment for these children may now be undertaken by any registered B.C. dentist without prior approval. Such services are not permissible if preventative or school dental services are available, or if in rural areas there is a community dental clinic.

Social workers and public health nurses are urged to encourage parents to have their children first examined by a dentist between the ages of three and four, in the interest of their future dental health.

It is hoped that this program will be gradually expanded so that all welfare cases can be similarly taken care of.

Charts and forms of authorization are provided by the officials of the association, who examine the finished charts and pass them on to the B.C. Department of Health and Welfare for payment.

Dr. Harold Turner, President of the B.C. Dental Association, says in the last issue of the News Bulletin: "While it is hoped that we will never be required to work under a system of socialized dentistry, should it be instituted, then surely if we have merited the confidence of the Department of Health by our honest and conscientious handling of welfare work, we will be also able to assume control of any system of socialization which may be inaugurated."

The first fall meeting of the **Victoria and District Dental Society** was held on September 22nd with the new executive in charge. Guest speaker for the evening was Dr. Lloyd Jacobson of the University of Washington School of Dentistry, and formerly of New Westminster, B.C. Dr. Jacobson gave a very excellent lecture on "Amalgam" with illustrative slides.

Some 40 Orthodontists from as far south as San Diego and as far east as Reno, Nevada, met at Victoria, B.C., recently for the two day Convention of the Pacific North-West Orthodontic Study Society.

Dr. P. J. Rumball and Dr. B. E. Nickells of Victoria were hosts at the convention. Their wives in turn were hostesses at the gathering of the visiting orthodontists' wives.

Under its able new president, Dr. George Creasy, the **Vancouver and District Dental Society** held its initial meeting of the season on October 6th. The special speaker was Dr. Daniel A. Listiak, head of the department of prosthetics at the University of Minnesota School of Dentistry.

In the afternoon his topic was "Diagnosis of Symptomatic Pains in Full Denture Construction," with slides showing muscle action. An interesting sound movie on "Velo-Pharyngeal Closure" followed.

The Visual Education Committee, under its chairman, Dr. Joe Ryan, showed a film entitled "Prelude to Kitimat," which dealt with the extensive construction at Kitimat, B.C.

At the evening meeting the subject was "What Goes Wrong with Partial Dentures." Dr. Listiak said: "Subjects on prosthetics are so numerous that it is difficult in a short time to cover much of the field. I have long given up the task of presenting individual techniques and instead have been dealing with principles involved and find that the men get a great deal more out of the meeting." D. H. M.

NEW BRUNSWICK

Dr. H. H. Peters of Saint John was elected President of the **New Brunswick Dental Society** at the annual meeting of the organization, held at the Lord Beaverbrook Hotel, Fredericton, September 19th and 20th.

Other Officers elected were: Vice-President, Dr. R. H. Bingham, Moncton; Sec., Registrar, Dr. S. K. Wetmore, St. John; Council Members, Dr. G. L. Ramsay, St. John; Dr. R. F. Sansom, St. John; Dr. H. B. Fleming, Moncton; Dr. L. B. Maillet, Buctouche; Dr. W. B. O'Brien, Fredericton; Dr. D. Boudreau, Edmundston; Dr. E. J. Leger, Bathurst; Dr. F. E. Sproul, Newcastle; Dr. J. B. Sutherland, Woodstock; Dr. P. M. Clarke, St. Stephen.

It was announced that plans are being made to hold the 1954 meeting of the Canadian Dental Association at St. Andrews, under the chairmanship of Dr. J. B. O'Brien. The New Brunswick Dental Society will act as host for the meeting.

The society expressed pleasure in the fact that the N.B. Medical Society at a recent meeting had joined the dental society in approving fluoridation of public water supplies.

A special resolution was passed congratulating two prominent members of the society who had recently received outstanding honors. Dr. A. J. Coughlan of Saint John had been appointed to the

office of President-elect of the Canadian Dental Association, and Colonel J. F. Edgecomb of Saint John had been appointed honorary dental surgeon to the Queen in Coronation honors.

Dr. R. S. Langstroth, director of dental services for the N.B. Department of Health, reported to the meeting that members of the society are co-operating with the department of health in establishing a number of dental clinics throughout the province.

ONTARIO

A convention of the comparatively new dental division of the **Ontario Public Health Association** was held in Fergus on Monday, Sept. 14th, with sessions in the forenoon and afternoon. A noon luncheon featured the gathering at the Union Street home of Dr. Montague Jarrett, director of the dental division of the Wellington County Health Unit. This unit is one of but half a dozen in Ontario as yet represented in the new organization of the dental branch of the provincial organization out of the 27 county health unit organizations of the total of 48 Ontario counties.

Those in attendance at the gathering in Fergus included Dr. Glenn T. Mitton, of the Ontario Department of Public Health, a member of the University of Toronto faculty of dentistry, Dr. F. A. Kohli, a director of the provincial department of health, dental division, Dr. R. M. Grainger, of the provincial department of health; S. Lee Honey, of the County Health Unit of Welland; R. A. Connor, Grimsby, of the Lincoln County Health Unit; J. W. M. Lawrence, of the Peel County Health Unit at Brampton; C. I. Coburn, of the Elgin County Health Unit at St. Thomas; William Walker, of Alma, county councillor and chairman of the Wellington County Board of Health; Dr. Jarrett, head of the dental division of the Wellington County Health Unit and Dr. B. T. Dale, MOH and director of the last named organization.

Dental problems were discussed with the accent on prevention of dental diseases.

In an address of welcome to the delegates, Wellington County Health board chairman William Walker told of dental care programs in Peel township with six district dentists participating, and similar efforts in Elora and in Eramosa Township, preceding the eventual organization on a county basis under the efficient direction of Dr. Jarrett.

Replying for the convention associates, Dr. Mitton followed his expressions of thanks for the welcome extended with references to necessity of familiarizing

people with the significance of the objectives of the organization. He emphasized the prevention aspect pertaining to dental troubles, with advice respecting regular visits to the family dentist. Prevention was all the more necessary because of the shortage of practising dentists in Ontario, he averred.

Called upon for remarks, Dr. B. T. Dale, as director of the Wellington Unit, took occasion to outline the different departments of that organization. In praising the work of Dr. Jarrett since coming to Fergus he said that this included a dental survey of the children of the 165 schools of Wellington County. This, he said, would lead to the recording of the dental history of all individuals. In this work, as in all the other branches, it had been found that the greater the measure of service accorded the more insistent were the requests for such beneficial help. There were still too many people at sea as to the significance of the unit's work.

Dr. Dale told too of the admirable co-operation afforded upon occasions of contacting the officials of the dental section of the provincial department of health in Toronto.

The Seventy-Seventh Annual Convention of the **Eastern Ontario Dental Association** was held September 20th-21st-22nd, at the Chateau Laurier in Ottawa. On Sunday a golf tournament was held during the daytime and in the evening a musicale in the Convention Hall of the Chateau.

A program of lectures and clinics were arranged for Monday and Tuesday and the Dental Nurses and Assistants Association and Ottawa Dentists wives Association met at the same time. The joint luncheon of dentists and wives was addressed on Monday by Norman Reddaway of the Staff of the United Kingdom High Commissioner. Mr. Reddaway spoke on "Problems of Foreign Policy Today".

A dinner and dance was held in the Assembly Hall at Lansdowne Park on September 21st. On Tuesday, members heard Dr. Don W. Gullett, Secretary of the Canadian Dental Association and Dr. Harvey Reid, Chairman of Health Insurance Studies Committee of the C.D.A. They spoke on "Health Insurance Studies".

During the Convention, clinics were conducted by Dr. Ralph T. Sommer, of the University of Michigan, Comdr. A. G. Neilson, United States Navy, Dr. A. W. S. Wood, Toronto, Dr. R. E. Dagg, McGill University, Maj. W. N. Sinclair, Royal Canadian Dental Corps. The Convention was presided over by Dr. Harold N. Beach, of Ottawa.

New officers elected in the Association are as follows:

President, Dr. E. E. Johns; immediate past-president, Dr. H. H. Beach; vice-president, Dr. F. M. Kemp; secretary-treasurer, Dr. M. M. Derrick; auditors, Dr. L. F. MacLachlan and Dr. W. H. Pritchard.

On the Advisory Board are—Dr. John Tantin, Dr. J. A. Gauthier, Dr. H. N. Beach, Dr. A. Stimson, Dr. C. E. Woods, Dr. W. G. Collins, Dr. J. C. Cummings, Brig. E. M. Wansbrough and Dr. F. J. Phillips.

Northern Ontario Dental Association - Dentists from all over Northern Ontario and some from Northern Quebec, accompanied by their wives spent Friday and Saturday, September 11th and 12th, in New Liskeard attending the 13th Annual Convention of the Northern Ontario Dental Association.

Activities started with registration at the Community Hall at noon Friday September 11th, followed by Clinics and lectures by Dr. Edward R. Bilkey and Dr. George C. Hare both of Toronto. Dr. Bilkey's general subject was "Paedodontics" and Dr. Hare discussed various aspects of "Endodontics".

Friday evening a reception was held in the Legion Lounge. Saturday noon, in the Auditorium, Luncheon was served to the conventioners with Dr. Sidney T. Smith of New Liskeard, President of the Association presiding.

Guest speaker was Brig. E. M. Wansbrough of Ottawa, Director General of the Royal Canadian Dental Corps, who gave a resumé of dentistry in the army, touching on the good scope, the suitability of locations, the excellence of equipment, and the fact that little time was lost by soldiers due to attendance at dentists' offices. Brig. Wansbrough who had travelled all over Canada as well as in Korea, Germany and France, gave some interesting highlights of his impressions.

Other guests at the head table included, Dr. R. A. Torrance, North Bay, Vice-president of the Association and who later was raised to the presidency; Secretary-treasurer, Dr. J. C. Crawford, Haileybury; Dr. E. R. Bilkey, Dr. G. C. Hare, Dr. J. H. Johnson, President O.D.A., Dr. G. T. Mitton and Dr. R. G. Ellis of the faculty of dentistry, University of Toronto, Mayor W. J. Barr and Rev. George W. Murdock, both of New Liskeard.

The wives of the dentists were entertained at luncheon in the Banquet Room downstairs and were welcomed by Mrs. W. J. Barr, wife of the Mayor with Mrs. S. P. Smith, wife of the President of the Association introducing the guests.

In the evening a banquet was held in the Main Auditorium with Dr. and Mrs. S. P. Smith, Dr. and Mrs. J. Crawford, Dr. and Mrs. R. A. Torrance, Dr. G. T. Mitton, Dr. R. G. Ellis, Dr. J. H. Johnson, Dr. G. C. Hare, Dr. E. R. Bilkey and Brig. E. M. Wansbrough, as Head-table guests.

Following the banquet entertainment was provided by the Ruby Dunn Wathen Memorial Choir and later the guests danced to the music of the Country Club Orchestra.

The sale of chocolate milk in school cafeterias debated by the Toronto Board of Education for several years was banned recently by an eleven to seven vote. A presentation was made on behalf of the Academy of Dentistry, Toronto, the Dental Public Health Committee of the Ontario Dental Association and the Research Committee of the Canadian Dental Association by Dr. Jack Kreutzer of Toronto.

GENERAL NEWS

Dr. Oren A. Oliver, of Nashville, Tenn., a former president of the A.D.A., was re-elected president of the Federation Dentaire Internationale at its 41st annual meeting in Oslo, Norway, July 27 through Aug. 1. Dr. LeRoy M. Ennis of Philadelphia and Dr. Philip Adams of Boston, also former A.D.A. presidents, were named vice-presidents of the F.D.I. Dr. Harold Hillenbrand, of Chicago, A.D.A. secretary, was elected as an honorary vice-president. Other officers for 1953-54 include: Dr. G. H. Leatherman, of London, secretary-general; Dr. Jack Stork, of Aerdenhout, Netherlands treasurer, and Dr. W. Stewart Ross, of London, chairman of the board. A total of 141 delegates, representing more than a score of national dental associations, participated in the meeting.

By unanimous action, F.D.I. delegates approved a resolution affirming the safety of the fluoridation of community water supplies. The resolution stated: "At the annual meeting of the Federation Dentaire Internationale in Brussels, June, 1951, the Federation urged that all agencies interested in dental and general health should give most careful consideration to the promotion and use of fluorides in the control of dental caries. The Federation at its meeting in Oslo, July, 1953, affirms that there has been no evidence of any deleterious effect to general health by the addition of fluorides in appropriate amounts to drinking water." In other actions, the F.D.I. elected the Pakistan Dental Association to full membership and granted a corresponding membership to the New Zealand Dental Association. The 1954 meeting of the F.D.I. will be held at The Hague, Netherlands, in August.

A survey of nomination papers of the new members of the House of Commons, discloses that the men and women elected in the August 10th election represent almost every walk of life, job or profession. Among the 265 members are three dentists—Dr. William Buchanan, Liberal, Cape Breton North and Victoria; Dr. W. A. Pommer, Liberal, Lisgar; and Dr. J. L. MacDougall, Liberal, Vancouver-Burrard.

Antizyme

The American Dental Association urged both the dental profession and the public to adopt "a conservative attitude" toward actual or implied claims for anti-decay qualities of a new Listerine "Antizyme" toothpaste offered to the public on August 20th.

The Association's Council on Dental Therapeutics and the Council on Dental Research, in a joint statement, reported that they had been unable to find any evidence that the new dentifrice has been directly demonstrated to reduce the incidence of dental decay in humans.

"It is the opinion of the Councils, therefore, that on the basis of the evidence presently available, actual or implied claims of anti-decay qualities for the new Listerine dentifrice are premature."

Pointing out that the evidence so far consists of laboratory findings only, the two Councils said that it is "contrary to the public interest" to suggest that the use of any dentifrice may be substituted for well-recognized dental health procedures such as toothbrushing immediately following the eating of sugar products and the avoidance of excessive consumption of sugar-containing preparations.

Dr. Harry S. Thomson elected President American College of Dentists

At a dinner attended by over 500, on Sunday September 27th, at the Hotel Cleveland in Cleveland, Ohio, Dr. Harry S. Thomson was installed as President of the American College of Dentists. Dr. Thomson is the first Canadian to occupy this high office.

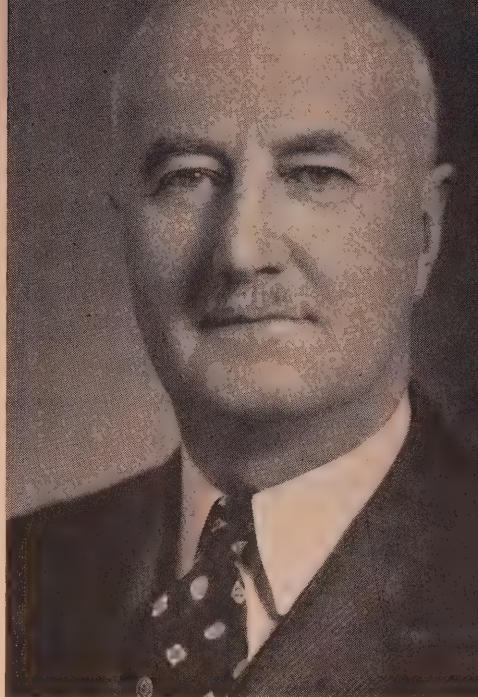
Following the President's inaugural address covering the history and objectives of the College and its many contributions to the various aspects of dentistry, a presentation was made of a suitcase and briefcase from the Canadian confreres of the newly elected President. The following presentation address was given by Dr. Don W. Gullett.

*Mr. President, Hon. Guests,
and Fellows of the College:*

My task is a brief one—my duty a pleasant one.

Harry S. Thomson was born and received his early education in an area of Canada where it is commonly said that their chief export is brains. Whether or not we Canadians all agree with this statement is of little moment, but one thing is certain; we are unanimous in our opinion that it holds true for Harry Thomson. In passing it is noted that he is a graduate of Tufts.

For most of us his name has been a by-word since we have known anything of dentistry. Without hesitation we can say that his contribution to Canadian dentistry has been incomparable. Early in his career he was recognized as a born leader. He is rightfully credited with the initiation and development of dental public health in Canada. His outstanding leadership was such that lay organizations, governments, and organized dentistry gave him unqualified support for several decades. Recently his contribution has been recognized by the award of a Coronation Medal by the Queen. His enthusiasm for dentistry never wavered over the years and his stature has always been in the ascendancy both as a citizen and as a professional man. He balanced these two attributes with such skill that his friends and admirers are legion.



To the Canadian Fellow a feeling of pride exists in that for the first time a Canadian is elected as President of the College. Our esteem is accentuated in that the member selected is our loyal friend and counsellor for so many years. We felt that this special occasion should not pass without marking our feelings by presenting this small token to him.

Fifteen Canadian members of the College were in attendance at the meeting.

Fellowships in the American College of Dentists were granted to the following Canadian dentists: From New Brunswick, Dr. R. S. Langstroth; Nova Scotia, Dr. A. Nutlay, Dr. A. B. Havestock; Quebec, Dr. Gerard de Montigny; Ontario, Dr. H. M. Morrow, Dr. C. T. Moyle, Dr. W. D. Clark, Dr. F. L. Williamson, Dr. G. N. Stewart, Dr. R. J. Godfrey, Dr. L. F. Kreuger and Dr. I. W. Hamilton.

BRITISH COMMONWEALTH NEWS

The condition of the teeth of pre-school children at Kilmarnock is unsatisfactory, states the town's medical officer of health, Dr. B. R. Nisbet, in his report for 1952. He urges that special treatment be provided for the younger age groups and for expectant mothers. "It has been found," he says, "that only one hour in

every 300 is spent by general dental practitioners in the conservation of deciduous teeth. It is obvious that unless local health authorities lay on a special service the necessary treatment for the younger age groups will not be done." Glasgow Herald.

IN MEMORIAM

Stewart Lockridge - Dr. Stewart Lockridge of Tamworth, Ontario, an Honorary Member of the Royal College of Dental Surgeons of Ontario, died in Tamworth this year.

Born in Tamworth, in 1873, he received his early education there and later at Queen's University. He then in 1900 graduated from the Royal College of Dental Surgeons of Ontario. While practising both at Napanee and Tamworth he did spend most of his life in the latter location.

Dr. Lockridge was a member of the Anglican Church.

He is survived by his sister, Mrs. Radcliff, of Napanee.

Reginald Clifton Crosby - Dr. Reginald Clifton Crosby died suddenly on Sept. 11th at the Infirmary in Halifax. Dr. Crosby graduated from Dalhousie University in 1917 and served in the Royal Canadian Dental Corps in both the First and Second World Wars, attaining the rank of Captain during the latter engagement. Dr. Crosby practised in the town of Dartmouth, Nova Scotia.

A member of St. James United Church, he took an active part in many of the church activities. He taught Sunday School and was a member of the church choir. He was also active in both the Dartmouth Curling Club and the Dartmouth Kiwanis Club until forced to resign due to recent ill health.

Surviving are his wife, the former Christian MacCarthy, and one son, Reginald of Dartmouth.

Edward Cassidy Campbell - Dr. Edward Cassidy Campbell died Sept. 22nd, in Saskatoon. He was 81 years of age.

Dr. Campbell came to Saskatoon in 1912 and practised dentistry until 1938 when he retired and moved to Toronto. He was an active worker in the Conservative Party throughout his life. He was a Life Member of Imperial Lodge No. 60, AF and AM, a member of the consistory and past president of the Nutana Curling Club in Saskatoon.

Surviving are two daughters, Mrs. D. E. Walker of Saskatoon, and Mrs. G. A. Stevenson, Tampa, Fla., one son Wing/ Cmdr. E. Campbell of Rockville, Ont., and one sister Mrs. E. Val Tilton, Kitchener, Ont.

George Byron Irwin - Dr. George Byron Irwin of Mattawa, Ontario, died August 14th, 1953 at the age of 49 years.

He was born at Port Morien, N. S., receiving his early education there, at Dalhousie University. Later he graduated in 1931 from the Faculty of Dentistry, University of Toronto. He practised in Mattawa from 1931 to 1937, in Sturgeon Falls from 1937 to 1940 then Barry's Bay and Mattawa again.

Dr. Irwin was a member of the Renfrew County Dental Society and the Canadian Legion. He served in the Royal Canadian Dental Corps during World War II for a short time.

He was a member of the United Church of Canada. Dr. Irwin is survived by his Mother, a sister and two brothers.

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Brève comparaison entre les enseignements dentaires français et américains*

par NICOLAS EOUAGNIGNON, M.D., Dahomey

Il est indispensable, afin d'établir une comparaison judicieuse, de donner une vue d'ensemble de l'enseignement de la dentisterie en France.

En France, il existe deux sortes de dentistes

- le chirurgien-dentiste et
- le stomatologiste.

Pour être chirurgien-dentiste, il faut suivre le cycle d'études ci-après: obtenir obligatoirement la deuxième partie du baccalauréat avant de s'inscrire à une école dentaire. Les cours durent cinq ans et comprennent:

- a) un enseignement théorique (anatomie générale, anatomie dentaire, des éléments de physiologie et d'embryologie générales et dentaires, éléments de pathologie générale et médicale, des cours détaillés de pathologie dentaire,
- b) un enseignement pratique,
- c) des stages obligatoires dans les hôpitaux.

A la fin des cinq années, l'étudiant passe, en juin, un examen pratique et théorique devant un jury de l'école dentaire qui l'a formé. S'il n'est pas reçu, il repasse son examen à la session d'octobre.

Mais pour exercer, il ne lui suffit pas d'être diplômé d'une école dentaire, il lui faut absolument obtenir le diplôme de chirurgien-dentiste octroyé par la Faculté de Médecine à laquelle les écoles

dentaires d'une ville sont obligatoirement rattachées. Seul, ce diplôme est reconnu par la loi. Pour l'obtenir, l'étudiant-dentiste finissant passe un examen en juillet devant un jury composé en majorité de stomatologistes. S'il n'est pas reçu en juillet, il se représente à la session d'octobre.

Il existe plusieurs écoles dentaires en France, la ville de Paris par exemple en compte cinq à elle seule.

Pendant les deux premières années (où l'étudiant travaille sur "fantôme" dentoforme construit avec du plâtre et des dents naturelles provenant des cliniques dentaires des hôpitaux) il n'est pas admis à travailler sur patient, ni dans la clinique de son école, ni dans un hôpital. A partir de la troisième année, il va à l'hôpital trois fois par semaine et le reste du temps il travaille matin et soir dans la clinique de son école. Son stage à l'hôpital comprend un enseignement théorique d'une demi-heure à une heure au début de la matinée, un enseignement pratique (dentisterie opératoire, extraction et périodontie) sous la direction d'un stomatologiste, chef de service aidé, de plusieurs assistants - stomatologistes. A l'occasion de cet enseignement, il est souvent donné des séances de diagnostic où il est constamment fait appel aux connaissances des étudiants en pathologie buccale. Les cours de pathologie buccale sont les mêmes que ceux donnés aux

* Cette courte étude a été faite par un diplômé des écoles de France, qui est venu faire une année d'études post-scolaires à l'Université de Montréal (Faculté de chirurgie dentaire).

stomatologistes, avec la différence qu'à l'examen les questions posées sont infiniment plus simples que celles auxquelles répondent les stomatologistes.

Le stomatologiste est le docteur en médecine (correspondance de M.D. américain) qui a décidé secondairement de se spécialiser en art dentaire, comme il se serait décidé pour l'accouchement, la chirurgie générale, l'ophtalmologie ou la psychiatrie. Il est appelé stomatologiste afin qu'on le distingue du chirurgien-dentiste. Seul, il a le droit de porter le titre de "docteur" alors que le chirurgien dentiste est appelé "monsieur."

Il se distingue essentiellement du chirurgien-dentiste en ceci que seul, il a le droit de faire de la chirurgie buccale et de devenir chirurgien esthétique, si le cœur lui dit de poursuivre des études dans ce domaine.

C'est à lui que le chirurgien-dentiste adresse les cas de pathologie buccale à diagnostiquer et à soigner; c'est à lui que le chirurgien de chirurgie générale adresse les cas de fracture maxillo-faciale, de chirurgie buccale et de perforation du voile (par accident ou malformation congénitale).

Sauf dans les hôpitaux des petites villes, il est seul qualifié à diriger un service de clinique dentaire dans un hôpital.

Pour être stomatologiste, il faut obligatoirement posséder le doctorat en médecine ou être en dernière année d'études médicales, à la veille de soutenir une thèse de doctorat. Le docteur en médecine qui termine ses études de stomatologie, doit obligatoirement présenter un travail original sur la stomatologie, un mémoire d'au moins 50 pages. Les études de stomatologie durent trois années (après le doctorat); la troisième année peut être passée à l'étranger, mais à charge de subir les examens terminaux en France devant le même jury et aux mêmes dates que tous les étudiants finissants de la promotion.

L'étudiant en médecine qui a commencé ses études à la veille de soutenir sa thèse, comme nous l'avons vu plus haut, est dispensé du mémoire de 50

pages, à condition que sa thèse porte sur un sujet de dentisterie ou d'hématologie. Mais s'il arrive en troisième année de stomatologie sans avoir soutenu sa thèse de doctorat en médecine, son diplôme de stomatologiste ne lui sera pas remis tant que cette dernière formalité n'aura pas été accomplie.

Les études précliniques de l'élève-stomatologiste ne durent qu'un trimestre (de septembre à décembre). Dès le retour des vacances de Noël, il commence à travailler en clinique. Et dans les hôpitaux, il est autorisé à pratiquer des opérations de chirurgie buccale dès sa première année.

Etablissons maintenant une petite comparaison entre les deux enseignements: français et américain.

Au point de vue économique, les études dentaires sont infiniment moins coûteuses en France qu'au Canada. Il y a une proportion de 1 à 4 en ce qui concerne les frais universitaires et l'écart est encore plus grand en ce qui concerne l'achat des instruments. En France, des étudiants de condition modeste peuvent devenir chirurgiens-dentistes; quelquefois même, les étudiants pauvres, désireux de devenir médecins, se font d'abord dentistes pour avoir les moyens de payer leurs cours de médecine. Au Canada, par contre, on a l'impression (du moins pour l'étranger) que la profession dentaire n'est abordable qu'à la seule classe aisée. L'étranger venu d'Europe ressent durement cette différence et éprouve beaucoup de difficultés à se faire croire par ceux qui, en Europe, supportent ces frais d'étude. Evidemment, en Amérique, l'instrumentation employée est beaucoup plus variée en raison même du fait que la méthode est plus précise, donc plus exigeante.

Si l'on se place sur le plan scientifique, il y a deux domaines à considérer.

1) domaine théorique: en pathologie buccale, par exemple, le niveau est inférieur à celui du stomatologiste et même du chirurgien-dentiste. Mais le dentiste canadien, grâce à ses deux années préparatoires de médecine, est à même de mieux comprendre la pathologie buccale

et dentaire que le chirurgien-dentiste français. Cette lacune chez le dentiste français est en voie de disparaître grâce aux récents remaniements des études dentaires (le régime exposé plus haut est l'ancien). Le nouveau régime exige en plus de la deuxième partie du baccalauréat, le certificat de physique, chimie et biologie anciennement exigé des seuls étudiants en médecine. Les étudiants-dentistes ne font pas encore deux années préparatoires de médecine, mais ils sont tenus d'accomplir des stages hospitaliers avec les étudiants en médecine reçus au P.C.B., la même année qu'eux. Cela les familiarise avec les premières notions pratiques de médecine et de chirurgie générales.

2) Dans le domaine technique, l'enseignement est nettement plus développé au Canada.

a) En prothèse, par exemple, l'enseignement est donné là-bas en fonction du fait que, plus tard, le dentiste, et particulièrement le stomatologiste, ne sera pas appelé à confectionner lui-même les dentiers, à souder les couronnes et les ponts, ce travail étant réservé au mécanicien-dentiste (technicien). Son attitude ultérieure sera en quelque sorte pareille à celle de l'ingénieur qui calcule le poids des métaux, des pierres et des matériaux divers entrant dans la construction d'un pont, d'un viaduc, mais qui ne prend pas lui-même en main le chalumeau ou la truelle.

Cependant, il serait profitable que le dentiste français "mette la main à la pâte," comme le dentiste américain. En effet, ce dernier, de par sa formation, sait, presque autant que le technicien, l'effort, l'habileté, les possibilités que réclame une prothèse donnée. Cela lui permet de concevoir une prothèse de façon précise, pour répondre parfaitement à une correction donnée, de donner des indications précises à son technicien, de savoir d'avance ce qui est possible et ce qui ne l'est pas, et de renseigner exactement son patient sans risquer de "s'en faire conter," par son collaborateur.

De diverses phases de construction d'un dentier complet, par exemple, des

métaux et instruments employés sont nettement plus précis, ce qui assure à la pièce de prothèse de réaliser parfaitement sa destination. Le balancement d'un dentier complet est une chose merveilleuse. Or seuls, les dentistes pourraient le réaliser convenablement. Les Européens rendraient certainement un meilleur service à leurs patients en adoptant la méthode du balancement du dentier.

b) La périodontie est un peu négligée; on ne lui accorde pas l'importance qu'elle revêt en Amérique.

c) En dentisterie opératoire, c'est une très bonne chose que l'étudiant apprenne dès l'école le maniement des ciseaux. En France, il ne manie les ciseaux que dans son propre cabinet, si le cœur lui en dit, tandis que, pendant toute sa scolarité, il apprend à confectionner les cavités avec la seule fraise.

Disons en passant que la radiographie systématique de toute la bouche en dentisterie opératoire, comme en prothèse d'ailleurs, est une excellente pratique.

Les diverses formes de cavité et la technique vigoureuse de leur confection revêtent davantage d'importance ici qu'en France. Le contrôle exercé en dentisterie opératoire sur l'étudiant, même celui de 4^{ème} année, est une très bonne chose, car il incite l'élève à bien faire, à prendre de bonnes habitudes et à acquérir une discipline d'exécution qui lui resteront plus tard, même si dans la vie il essaie de négliger les principes ainsi solidement ancrés.

Une chose est regrettable cependant au Canada, c'est le délaissement complet des ouvrages français en pathologie buccale ou dentaire. Avec les ouvrages américains, l'étudiant acquiert l'habitude de ne s'intéresser qu'aux notions qui lui sont uniquement utiles pour sa pratique quotidienne. Les ouvrages français apparaissent un peu oiseux peut-être aux yeux de certains, en cela qu'ils s'étendent sur des détails théoriques apparemment inutiles pour la pratique courante, mais ils donnent le goût de la contemplation pure, ce qui n'est pas de trop dans une profession comme la nôtre, où on risquerait vite, si on ne luttait pas, à tuer toute

la partie intellectuelle, aux dépens de la partie artisanale, plus commode car plus reposante.

J'y rattacherai la spécialisation à outrance. En dehors du fait que le patient paie toujours trop cher des soins donnés par un hyperspécialiste en une matière, cette façon de procéder risque de conduire à la paresse intellectuelle et de faire perdre de vue l'esprit de synthèse qui est la partie vraiment intéressante de la pratique médicale.

Pour ma part, si je suis heureux d'aller servir en Afrique, c'est entre autres choses parce que, contrairement à mes confrères stomatologistes de France, je

pourrai pratiquer en même temps la dentisterie et la médecine générale.

En conclusion, on doit reconnaître en toute justice que sur le plan technique, la dentisterie en Amérique a une considérable avance. Il est donc souhaitable que les Européens adoptent de plus en plus les méthodes américaines ou viennent en Amérique faire un stage, 6 à 12 mois. Par contre, le dentiste américain, et principalement le Canadien, se trouvera bien de s'intéresser davantage aux ouvrages français en pathologie orale et dentaire et de ne pas s'en tenir aux seuls ouvrages américains, un peu trop utilitaires.

Les manifestations buccales des maladies du sang

Certaines maladies du sang ont des répercussions évidentes sur les tissus gingivaux et périodontiques. Dans les cas de leucémie aiguë, par exemple, le tableau gingival d'ulcération, d'hémorragie spontanée et d'hyperplasie a pour contrepartie, un tableau histologique de névrose et d'infiltration par les globules blancs incomplètement développés. Chez les malades atteints de leucémie myélogène ou de leucémie monocytique aiguë, on peut établir le diagnostic en se basant sur une biopsie, grâce à la présence caractéristique de ces leucocytes incomplètement formés. Un frottis de cul-de-sac gingival montre des cellules du même genre dans les cas de leucémie myélogène. On ne remarque aucune modification histologique dans les cas de leucémie chronique myélogène ou lymphatique.

La gingivite ulcéreuse qui se produit dans les cas d'agranulocytose aiguë est causée par la disparition des leucocytes neutrophiles. Les échantillons obtenus par biopsie ne révèlent que des lymphocytes, des plasmocytes, et de nombreux globules bi- et trinucléaires.

Dans les cas d'anémie, la gencive est pâle, tandis que dans ceux de polycythémie elle est de couleur noirâtre ou rouge foncé, et l'on observe une tendance à l'hémorragie.

Dans les maladies hémorragiques—y compris le purpura thrombocytopénique, l'hémophilie et le scorbut—les hémorragies se produisent aussi bien à l'intérieur qu'à l'extérieur des muqueuses ou de la gencive. Le mécanisme de l'épanchement sanguin dans ces maladies fait intervenir une ou plusieurs des causes suivantes: 1. modifications qualitatives ou quantitatives des hématoblastes; 2. perturbations affectant le mécanisme de la coagulation; 3. perméabilité accrue des parois capillaires.

Les maladies des organes hématopoïétiques se traduisent souvent par des manifestations et symptômes locaux intéressant la gencive, les tissus périodontiques et la muqueuse buccale. Ces maladies sont caractérisées par des modifications pathologiques intéressant non seulement le périodonte mais aussi d'autres organes, de sorte qu'on ne peut pas comparer les symptômes périodontiques d'une maladie générale de ce genre avec ceux des affections périodontiques proprement dites.

Dans les cas de leucémie aiguë, l'infiltration myéloïde ou monocytique constitue la manifestation gingivale du désordre général, et elle est spécifique de ce désordre, en ce sens qu'on peut établir un diagnostic en se basant uniquement sur une biopsie, grâce à la présence caractéristique des leucocytes incomplètement formés.

(F.-M. Wentz, Journ. Amer. Dent. Assoc., 44, N. 6, 1952, p. 698.)

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La valeur des dentifrices modernes

Au cours du Congrès annuel de l'Association dentaire américaine, tenu à Cleveland, Ohio, durant la dernière semaine de septembre, le programme contenait une discussion détaillée sur la valeur de dentifrices pour prévenir la carie dentaire.

Ce débat organisé dans le but de jeter un peu de lumière sur les allégations des réclames intempestives des fabricants de pâtes à dents, réunissait six dentistes s'occupant de recherches dans ce domaine.

Les conclusions de cette discussion, à laquelle assistait la majorité des congressistes, soit quelques dix milles dentistes, a établi qu'il n'y a pas encore sur le marché une substance dentifrice susceptible de prévenir la carie dentaire et les pathologies des gencives.

Le docteur Thomas J. Hill, président du Council on Dental Therapeutics de l'A.D.A., qui agissait comme coordinateur du débat, a résumé ainsi les opinions émises au cours de cette séance: "Rien ne prouve d'une façon définitive que les dentifrices utilisés aujourd'hui par le public diminuent la fréquence de la carie, grâce aux agents thérapeutiques qui y sont incorporés." Le docteur Leonard S. Fosdick, de l'Université Northwestern, de Chicago, traite de la question des antienzymes ajoutés aux dentifrices pour conclure que ces inhibiteurs, quoique pleins de promesses, n'ont pas encore prouvé leur efficacité. Ces substances inhibitrices resteraient accolées aux dents et combattraient l'action des acides formés par les sucres en désorganisant le métabolisme des bactéries. Avant de tirer des conclusions définitives, il faudra entreprendre des recherches cliniques pour se rendre compte de l'action positive de ces substances "in vivo". La réclame faite par les compagnies pharmaceutiques au sujet de cette pâte dentifrice est prématurée et n'est pas appuyée par les faits cliniques. De plus, rien ne prouve que les bactéries ne changeraient pas leur métabolisme après un certain temps.

Le rôle de la chlorophyle dans les dentifrices a été discuté par le docteur John W. Hein, de l'Université de Rochester. "L'étude sur les dérivés de la chlorophyle utilisés comme agents préventifs de la carie dentaire n'a pas dépassé le stage expérimental. Les recherches entreprises sur ces substances n'ont pas atteint la période où elles peuvent être introduites dans le domaine clinique. On ne peut donc encore faire aucune affirmation sur leur valeur. Quand aux tissus gingivaux, la chlorophyle n'a pas encore donné ses preuves sur son efficacité." On a abusé des propriétés de la chlorophyle en leur donnant des applications ridicules.

Le docteur Robert G. Kesel, de l'Université de l'Illinois, a traité de ses expériences sur les produits ammoniacaux mêlés aux pâtes à dents. On a cru que l'ammoniaque aiderait aux phénomènes naturels de défense organique contre la carie. A date, les travaux se sont limités aux effets des sels ammoniacés sur la teneur qualitative et quantitative de la flore bactérienne de la salive. Ces recherches sont basées sur le fait que la teneur en ammoniaque de la salive des personnes indemnes à la carie est fort élevée.

Le docteur Helmut A. Zander, de l'Université du Minnesota, exposa à l'assistance ses recherches sur le pouvoir bactéricide des antibiotiques mêlés aux dentifrices. Des travaux entrepris sur les animaux de laboratoire indiquent que les antibiotiques peuvent avoir une influence favorable d'ordre inhibiteur sur la carie dentaire. Jusqu'à maintenant, le public ne peut se procurer des dentifrices additionnés de pénicilline qu'avec une ordonnance et ces pâtes ou poudres ne sont prescrites que pour les cas de carie généralisée ou encore qu'avec un régime alimentaire contrôlé. La pénicilline ajoutée à certains dentifrices présenteraient certains dangers.

Ce débat arrive à son heure. Depuis quelques années, tous les média de publicité s'efforcent de convaincre le public des mérites exceptionnels de nouveaux dentifrices pour prévenir la carie. Les fabricants de ces produits, qui, comme on le sait, font partie de cartels internationaux, qui consacrent des millions annuellement à leur réclame, s'adressent directement à l'homme de la rue, sans passer par la profession dentaire, dont pourtant le premier rôle est de sauvegarder la denture des populations.

Ces maisons pharmaceutiques, la plupart du temps, se sont emparé des résultats préliminaires de recherches entreprises dans des laboratoires d'universités pour lancer sur le marché des produits dont l'efficacité n'était pas prouvée d'une façon définitive.

Les déclarations faites par des chercheurs sérieux au cours de ce débat prouvent qu'aucun des dentifrices présentement offerts au public ne donne, d'une façon scientifiquement contrôlée, les avantages que prônent leurs annonces tapageuses.

Il était temps que ces maisons de commerce apprennent que la profession a un mot à dire dans la confection de produits qui jouent un rôle dans le maintien de l'hygiène dentaire.

Aussi l'Association dentaire américaine a-t-elle décidé de constituer un

organisme qui surveillera les énoncés et les formules des fabricants de pâtes à dents. Toute cette discussion a confirmé ce que la profession dentaire savait déjà: à savoir qu'on ne prévient pas une maladie en employant sans cesse des médicaments et que l'usage de la brosse à dents, comme moyen mécanique de nettoyage, est encore plus important que tout agent incorporé dans les pâtes dentifrices. Peu importe la pâte, il faut brosser ses dents en temps opportun pour prévenir la carie dentaire.

GERARD DE MONTIGNY.

Nouvelles de l'Association

Caucus au sujet de l'enseignement dentaire, à Saskatoon

Les représentants des quatre provinces de l'Ouest (Colombie britannique, Alberta, Saskatchewan, Manitoba) se sont réunis à Saskatoon, le 9 septembre, pour discuter l'opportunité d'augmenter les facilités d'enseignement dentaire dans cette partie du pays. Les présidents des universités de ces provinces assistaient à la réunion. Les ministères de la Santé et d'Enseignement, ainsi que les collèges provinciaux y avaient envoyé des représentants. L'Association dentaire canadienne y avait délégué son président et son secrétaire, le Ministère de la Santé et du Bien-Etre social, son directeur de la division d'Etude sur l'Assurance-Santé et la Fondation Kellogg, le docteur P. Blackerby. Le docteur Grant y avait été invité pour qu'il explique à l'assistance le système mis en force dans les Etats du sud pour promouvoir l'enseignement universitaire.

Les divers représentants y soumièrent des mémoires; tous ces mémoires soulignaient l'urgence d'augmenter le nombre des diplômés en chirurgie dentaire pour répondre aux besoins de la population de l'ouest du pays. Les conclusions de cette réunion établissent que les provinces de l'ouest auraient besoin de 100 nouveaux dentistes, par année. Actuellement, les écoles de la région ne fournissent qu'environ 30 nouveaux diplômés, chaque année; de plus, on a souligné l'avantage qu'il y aurait à organiser des cours pour des hygiénistes dentaires.

De caucus réunissait les autorités des

quatre provinces occidentales et ces autorités sont bien au courant des besoins et de l'enseignement dentaires. Tous se montrèrent inquiets de la situation et étaient d'avis qu'il faudrait trouver une solution à brève échéance. En définitive, on a suggéré que l'Université d'Alberta s'organise pour recevoir un plus grand nombre d'étudiants et pour donner un enseignement aux hygiénistes dentaires; de plus, on a émis le voeu que les Universités de Colombie britannique et du Manitoba ouvrent des écoles dentaires. La Fondation Kellogg a défrayé les dépenses de la réunion.

La fluoruration se répand aux Etats-Unis

L'Association dentaire américaine annonce qu'au 1er septembre, 784 municipalités fluorurent leur eau de consommation. La population desservie par ces municipalités se chiffre à 15,289,665 personnes.

Les dentifrices antienzymes

Depuis plusieurs années, on vante à tort et à travers les mérites de diverses substances incorporées aux pâtes dentifrices. Des réclames portent aux nues les propriétés miraculeuses de dentifrices contenant de nouveaux agents. Une campagne d'annonce est-elle terminée qu'une nouvelle découverte s'étale partout dans les journaux, à la radio, etc. La "trou-vaille" la plus récente nous a donné le dentifrice Antienzyme, dont le rendement est encore problématique. Selon la livraison du 20 août du Wall Street Journal, la campagne d'annonce d'une firme pharma-

ceutique, qui fabrique le dentifrice Antienzyme, atteignant le million pour septembre fut haussée à deux millions pour octobre et novembre.

Dans un éditorial paru en septembre dans le *Journal de l'Association dentaire américaine*, on faisait, bien à point, le commentaire suivant: "Il n'y a encore aucune preuve justificative que l'usage quotidien d'un tel dentifrice puisse prévenir la carie dentaire, quoiqu'on ait entrepris des recherches à ce sujet. Les dentistes ne devraient pas se prononcer jusqu'à ce que des expériences aient prouvé sa valeur ou son inefficacité et il est à souhaiter que le consommateur intelligent fasse de même.

Décès du docteur A. R. Rowlett

Le docteur A. E. Rowlett, de Leicester, Angleterre, président honoraire de la Fédération Dentaire Internationale, est mort, dimanche, le 13 septembre. Le docteur Rowlett était universellement connu par son dévouement aux choses dentaires dans le monde entier. Ses nombreux voyages ici, au Canada, dans l'intérêt de la profession, ont permis aux Canadiens de le connaître tout particulièrement.

Le docteur Rowlett fut le président de la F.D.I. et l'attaché dentaire à l'Organisation Mondiale de la Santé. Il avait aussi accepté la présidence de l'Association dentaire britannique, du Club des Chirurgiens buccaux d'Angleterre et de la Société européenne des Orthodontistes. Il était "fellow" du Collège Royal des Chirurgiens d'Angleterre et chirurgien-dentiste consultant au Leicester Royal Infirmary. Dès sa graduation, en 1899, il se fit remarquer par son zèle pour la profession et, toute sa vie, il a continué à lui prodiguer le meilleur de lui-même. Il était présent à l'assemblée annuelle de la F.D.I., à Oslo, en juillet dernier. En lui, la profession perd un ambassadeur émérite de la bonne cause.

On annonce le prix international Albert Joachim

A la demande de l'Association générale des dentistes de Belgique, la profession

dentaire belge a voulu commémorer le cinquantième anniversaire professionnel du docteur Albert Joachim, un des praticiens les plus éminents de ce pays. En accord avec un vœu exprimé par le Dr Joachim, on a établi un fonds dont le but est d'encourager la recherche scientifique en odonto-stomatologie; le comité de direction de ce fonds était d'avis que la meilleure façon de poursuivre cet objectif consistait dans l'attribution d'un prix pour des recherches. On a donc décidé de consacrer une partie substantielle des argents perçus à un prix national et à un prix international.

La Fédération Dentaire Internationale, à sa réunion annuelle, à Oslo, en juillet 1953, à la demande du comité du fonds, a accepté d'agir comme l'organisme responsable de l'octroi du prix, en considération du rôle de premier plan qu'a joué le docteur Joachim au sein de la Fédération; en effet, durant quarante ans, le docteur Joachim fut le représentant de la Belgique à la Fédération et durant toute cette période, il a fait montre d'un intérêt et d'une collaboration soutenus.

Le docteur Joachim, qui est F.D.S., R.C.S (Angl.) est aussi un des vice-présidents de la F.D.I. et, à cause de ce fait, la Fédération a été heureuse de se joindre à cet hommage rendu à cet éminent collègue.

Le prix international Albert Joachim sera décerné pour la première fois au douzième congrès international de Rome, en 1957; ce prix se chiffre à 50,000 francs belges.

Un jury nommé par le conseil de la F.D.I. décernera le prix au meilleur travail de science pure entrepris dans le domaine de l'odonto-stomatologie. On attire l'attention sur le fait que seuls les communications originales feront l'objet du concours et que les recherches devront avoir été effectuées par l'auteur lui-même et n'avoir par encore été publiées.

Comme l'assemblée générale de la F.D.I. avait prié son conseil de faire certains amendements aux règlements du concours, on ne publiera que plus tard ces règlements définitifs.

Tous ceux que la chose intéresse peuvent écrire pour le moment au docteur

G. H. Leatherman, secrétaire général de la F.D.I., à 35 Devonshire Place, London, W.1.; celui-ci fournira tous les renseignements nécessaires.

La Commission anglaise se prononce en faveur de la fluoruration

Après une période de temps assez longue, la commission appointée par le gouvernement anglais pour étudier la question de fluoruration des eaux de consommation a remis son rapport.

La commission anglaise composée de cinq membres et présidée par le Dr H. H. Stones, doyen de la faculté dentaire de l'Université de Liverpool, a fait enquête sur cette question au printemps de 1953 aux Etats-Unis et au Canada, avant de préparer son rapport.

Les experts anglais croient davantageuse la méthode qui consiste à ajouter des fluorures à l'eau de consommation pour diminuer la fréquence de la carie dentaire; ils ont donc recommandé d'adopter cette mesure en Angleterre. Le rapport mentionne qu'après une enquête menée aux Etats-Unis environ 60% de la carie dentaire a été enrayerée chez les enfants de 1 à 14 ans; environ six fois plus d'enfants ont des dents permanentes dénuées de carie dentaire (désintégration molaire).

De plus, des examens entrepris chez des adultes aux Etats-Unis et en Angleterre, montrent que les effets des fluorures se prolongent jusqu'à environ l'âge de 40 ans. On ne sait pas, y lit-on, si les fluorures retardent le développement des caries, mais la commission n'a pu trouver de preuve que l'eau fluorée ait un effet nuisible sur les manipulations industrielles, comme l'embouteillage, la fermentation, la cuisson, la buanderie ou certains procédés chimiques.

Le Dr H. E. Clark nommé au Bureau des Gouverneurs

Le registraire de la province de l'Ile-du-Prince-Edouard annonce officiellement que le Dr H. E. Clark, de Summerside, a été nommé représentant de cette province au Bureau des Gouverneurs de l'A.D.C. Le Dr Clark est un diplômé de l'Uni-

versité Dalhousie (1930) et a toujours pratiqué à Summerside, excepté durant la guerre où il a servi dans le Corps Dentaire Royal Canadien.

Plan d'assurance-pension de l'A.D.C.

Dans le dernier rapport annuel du Surintendant fédéral des Assurances, on note avec intérêt que les dépenses d'administration en rapport avec les recettes des compagnies sont les suivantes:

Compagnies	Déboursés pour les commissions des agents	Pourcentage des commissions en rapport avec les revenus des primes
A	\$4,405,750.00	11.9%
B	5,010,097.00	15.6%
C	5,486,552.00	13.4%
D	2,706,562.00	15.4%
E	7,586,106.00	16.9%
F	7,066,503.00	13.9%
G	9,119,615.00	13.5%
H	3,951,189.00	12.9%
I	5,651,181.00	15.5%
J	16,084,582.00	10.4%

En opposition avec ces chiffres, le pourcentage des dépenses du plan de l'A.D.C. n'a été que de 2.6% des revenus des primes pour la première année.

L'administrateur du plan de l'A.D.C. souligne que les membres de la profession dentaire peuvent bénéficier du plan aux taux les plus bas en Amérique du Nord, précisément parce que les dépenses d'administration sont réduites au minimum. Les dépenses d'administration pourront être maintenues à ce bas niveau par l'appui personnel que les membres peuvent accorder à ce plan.

Octrois à l'Ontario pour des séminaires

Quelques régions de l'Ontario bénéficieront de quelques huit séminaires, qui seront donnés aux dentistes et qui porteront surtout sur la pédonodontie, en accentuant l'aspect préventif de la question.

Le nombre des dentistes inscrits à ces séminaires sera limité pour que chacun puisse profiter des leçons, qui seront données au fauteuil. Chaque séminaire consistera en deux jours de cours donnés à vive allure. Ce projet a été conçu par le Comité d'Hygiène dentaire publique de l'Ontario et sera appliqué par la faculté de chirurgie dentaire de l'Université de Toronto. Le gouvernement fédéral a versé à cette intention la somme d'environ \$2,500.00.



Le docteur Eudore Dubeau

par PAUL-E. POITRAS D.D.S., Montréal

Le docteur Eudore Dubeau est mort le 25 septembre 1953. Ses cendres encore chaudes ne nous permettent pas de juger son oeuvre d'une façon impartiale. Il est impossible de tracer un portrait juste et ressemblant, en le résumant d'une manière satisfaisante, de cet homme, qui fut, jusqu'à sa dernière maladie, d'une activité étonnante. Malgré de nombreux déboires, il se dépensa sans compter au bien de sa profession, au bien de l'Université et au bien de la cité de Montréal. La critique ne l'a pas épargné; loué par les uns, bafoué par les autres, ses amis et ses ennemis ont toujours reconnu en lui un travailleur acharné.

Né à Québec, en 1875, du mariage de E.-J. Dubeau et de Camille Lacasse, il fut élève au petit séminaire de sa ville natale et chez les jésuites, au collège Sainte-Marie à Montréal, d'où il sortit bachelier ès-science. Indécis à s'orienter, il étudia simultanément la médecine à Laval de Montréal et la chirurgie dentaire au Collège-Dentaire-Bilingue qui commençait à donner une instruction para-médicale à trente-deux élèves (octobre 1892). Conseillé par des gens d'expérience, après une année d'étude dans les deux écoles, il se décida pour celle-ci où il décrocha la licence en chirurgie dentaire, après trois ans d'études.

En 1896, l'Université Bishop de Lennoxville ayant affilié le Collège-Dentaire-Bilingue du Québec à sa faculté de médecine, les dentistes licenciés, sans titre universitaire, après examens devant les professeurs de la Faculté, reçurent le parchemin de docteur en chirurgie dentaire, dont le docteur Eudore Dubeau fut un des récipiendaires.

Marié à mademoiselle Yvonne Leduc, il eut deux enfants, une fille, morte dans un accident d'automobile en France et un garçon, ingénieur public. En secondes noces, il épousa mademoiselle Céline Tanguay.

En plus d'une clientèle déjà nombreuse, en 1897, il accepte le secrétariat du Bureau des Gouverneurs des Chirurgiens-Dentistes de la province de Québec, occupation qu'il garda pendant vingt-trois ans.

Organisateur né, lors d'un congrès des chirurgiens-dentistes, tenu à Montréal, en 1902, il s'associa aux docteurs F.-A. Stevenson et J.-H. Bourdon pour fonder l'Association Dentaire Canadienne, dont il fut le premier secrétaire et le président de 1906 à 1908.

L'élément français du Québec, traité en cousin pauvre par une université anglaise et protestante, n'étant pas satisfait, fut la cause qu'en 1904, en collaboration avec les docteurs Joseph Nolin et J.-G.-A. Gendreau il fonda une école dentaire française. A sa demande, Mgr. Mathieu, alors recteur, affilia à l'Université Laval la nouvelle école et le nomma doyen, dignité qu'il garda jusqu'en 1944, soit une période de quarante ans.

Le docteur Eudore Dubeau fut délégué du Collège des Chirurgiens-Dentistes au congrès de la Fédération Dentaire Internationale de Paris, en 1900; de Berlin, en 1909; de Londres, en 1914. Membre actif, de la Fédération, il fut le secrétaire de sa commission d'enseignement. Membre honoraire de l'Ecole Dentaire de Paris, en 1909, celle-ci lui décerna une médaille de vermeil; en 1938, il était

nommé titulaire du prix international Miller. Il fut le président de la commission des relations dentaires pan-américaines, des Facultés Dentaires du Canada. En 1935, les anciens de la Faculté de Chirurgie Dentaire s'étant formé en Association, il fut élu le premier président.

Avec l'arrière-pensée de permettre aux diplômés universitaires de se mieux connaître, il fonda, aidé de quelques amis, le Cercle Universitaire. Après avoir visité les facultés dentaires américaines, il aménagea la faculté actuelle. Président de la commission de culture physique des étudiants, il travailla à faire construire un centre sportif sur le campus.

Son sens civique ne fut jamais discuté. Échevin du quartier Lafontaine de 1910 à 1923, il fut plus tard un des quatre-vingt dix-neuf conseillers. Après avoir lutté pendant des années pour une bibliothèque municipale, il présida sa première commission; en 1930, il se voua à l'érection du monument de sir Louis Hippolyte Lafontaine.

Ses nombreux voyages en Europe et aux Etats-Unis lui permirent de connaître plusieurs personnages éminents et ses qualités lui attirèrent de nombreux honneurs. Il reçut, en 1909, de la France, les Palmes Académiques; la rosette de l'Instruction Publique, en 1916; la Légion d'Honneur, en 1925; il était commandeur de l'ordre de Saint-Sava de Yougoslavie; officier de l'ordre Honneur et Mérite de Haïti; le Portugal le nomma consul, en 1931, et le décora de l'ordre du Christ.

Le 26 mai 1944, l'Université de Montréal lui decerna un doctorat en chirurgie dentaire "Honoris Causa", en reconnaissance de sa carrière d'enseignement universitaire.

Il restera une des personnalités les plus intéressantes parmi les chirurgiens-dentistes canadiens-français.

"Que la terre lui soit légère".

2043, rue St-Denis.

Prix de Stomatologie de la Société Scientifique de Stomatologie de Belgique

Extrait des statuts: Un prix de stomatologie, d'une valeur de cinq mille francs belges au minimum, est attribué tous les trois ans à l'auteur belge ou étranger, ayant présenté, en français, le meilleur travail de recherche scientifique ou de recherche clinique dans le domaine de la stomatologie.

Le prix peut être partagé entre plusieurs auteurs d'un même travail. L'attribution en est faite suivant le règlement spécial en vigueur. L'annonce des conditions requises pour la présentation des travaux est faite un an d'avance dans les journaux médicaux belges et étrangers, par les soins du Secrétaire général.

Règlement

Article premier. — Tout auteur d'un mémoire inédit dans lequel sont consignés les résultats de ses travaux est admis au concours.

Art. 2. — Seuls sont valables les travaux de recherche scientifique ou les travaux de recherche clinique relatifs à la stomatologie.

Art. 3. — Le texte doit être rédigé en français.

Art. 4. — Le manuscrit doit comporter au minimum, en double interligne, 15 pages dactylographiées et cent pages au maximum, y compris tableaux et clichés.

Les mémoires doivent être envoyés au Président de la Société scientifique de Stomatologie de Belgique, Mr le Docteur E. VLEMINCQ, 14, rue des Compagnons, Mons (Belgique), avant le 15 septembre de l'année au cours de laquelle aura lieu l'attribution du prix. (1954).

Art. 5. — Les mémoires doivent être

anonymes. Ils doivent comporter une devise. Celle-ci doit être reproduite sur un pli cacheté joint à l'envoi et dans lequel figurent le nom et l'adresse de l'auteur.

Art. 6. — Le jury est composé de trois professeurs des Universités de Bruxelles et de Liège, ainsi que du Président de la société. Il peut s'adjoindre toute personne qualifiée dans des domaines qui échapperaient à sa compétence. Il juge souverainement. Sa décision est sans appel.

Les candidats renoncent, en participant à ce concours, à toute réclamation éventuelle. Un mémoire non primé peut cependant faire l'objet d'une mention spéciale.

Art. 7. — Le mémoire primé paraît par priorité, en tout ou en partie, dans les Archives de Stomatologie.

Les mémoires non primés ayant fait l'objet d'une mention spéciale peuvent paraître, à la demande de leurs auteurs, en tout ou en partie dans les Archives de Stomatologie.

Art. 8. — Les manuscrits restent la propriété de la Société scientifique de Stomatologie.

Art. 9. — Les mémoires présentés peuvent être considérés comme insuffisants pour que le prix soit attribué à l'un d'eux et, dans ce cas, l'attribution du prix de Stomatologie est remise à l'année suivante.

Art. 10. — Le prix est remis à l'auteur du meilleur mémoire au cours d'une séance solennelle, à l'occasion de laquelle le Président lit le rapport justificatif établi par le jury.

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Reproduction d'un tableau de Sainte-Apolline, par R. Dionet, offert en hommage à la Faculté de chirurgie dentaire de l'Université de Montréal par l'Ecole Dentaire de Paris.



At this season of the year when our thoughts turn even more to Him born nearly two thousand years ago, may we reflect upon the annunciation to the shepherds by the multitude of the heavenly host—the words which today, more perhaps than any time in history, echo the prayers of all of us:

*“Glory to God in the highest and on the earth
peace, goodwill toward men”.*

WESLEY J. DUNN

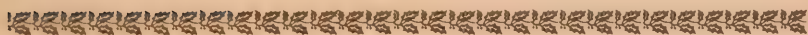




Photo by Nakash

F. A. EDWARD, D.D.S.,
Montreal, Quebec.
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Antibiotics in Dentistry**

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THE term "antibiotics" refers to substances which are elaborated by microorganisms, which in turn, have the property of inhibiting or destroying other microorganisms under propitious conditions. Naturally, we are interested in those antibiotics which inhibit or destroy pathogenic organisms which are found in dental infections. A growing list of antibiotics is now under experimental study but only those with established dental uses will be reviewed in this paper.

PENICILLIN

Penicillin was the first of the antibiotics to be used extensively and is still the most widely used of the group. Fleming¹ first reported upon the antibacterial activity of penicillin in 1929 and he was entirely aware of its potential therapeutic value at that time. However, the task of working out methods of growing the molds which produce penicillin and of extracting the penicillin were far beyond the capacities of any one man or laboratory. As a result, the problem was not solved until World War II, when the necessity for better anti-infectives led the governments of the United States and Great Britain to sponsor a vast multi-

million dollar research program which eventually led to the present abundant supply of penicillin.

When penicillin was first introduced, there was a great tendency to think of it as a panacea for almost all types of infections. This is an absolute misconception of penicillin activity, for many pathogens are not affected by penicillin. Fortunately, most dental infections are penicillin-sensitive, though there are exceptions to this rule. Generally speaking, penicillin is effective against gram positive organisms, although some gram negative organisms such as the gonococci and the meningococci respond to it. In some instances, certain strains of organisms may be sensitive and other strains of the same group of organisms insensitive to penicillin. In the case of the staphylococci, there is evidence that an increasing number of strains are resistant to penicillin; and recent studies indicate that 50 per cent or more of strains of staphylococcus aureus are resistant. In many instances other antibiotics must now be used for treatment of staphylococcus infections. Fortunately such infections are in the minority in dentistry. Penicillin has been found quite useful in the treatment of selected types of Vincent's cases and in

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actinomycosis. It is not effective against gram-negative bacillary infections, fungous infections, nor virus infections such as cold sores or aphthous ulcers.

Penicillin is virtually non toxic in the sense of causing organic injury, but an increasing number of patients are now known to be sensitive to it. Most recent observers are of the opinion that at least 5 per cent of the population is now sensitive to penicillin, and some estimates have run as high as 8 to 10 per cent.² It has become apparent that the topical use of penicillin is more liable to sensitize than the systemic use of the drug, and for this reason topical use should be reserved for those instances where it is of known value and where other methods of treatment will not work as well. Reactions in sensitive individuals may range from a mild erythema or a few hives, to severe serum sickness, exfoliative dermatitis, and anaphalactic shock. A number of deaths have been reported from reactions of the more severe type. It has been found that in the early stages of the less severe urticarial reactions to penicillin, the administration of one of the antihistamine agents, such as Benadryl or Pyribenzamine is of value.

Before administering penicillin to a patient, inquiry should always be made regarding prior reactions to the drug. If there is a history of penicillin reactions, some other antibiotic should be substituted or, if penicillin is particularly desired as the therapeutic agent, penicillin O may be substituted for standard forms of penicillin in most instances. Approximately 90 per cent of patients who are sensitized to penicillin G. tolerate therapeutic doses of penicillin O without reaction, and less than 1 per cent of patients who have no history of previous allergic reactions to penicillin G. will react to it. Thus the introduction of penicillin O is an important advance in the treatment of the penicillin-sensitive patient, though it will not immediately replace

penicillin G. for general use because of increased costs.³

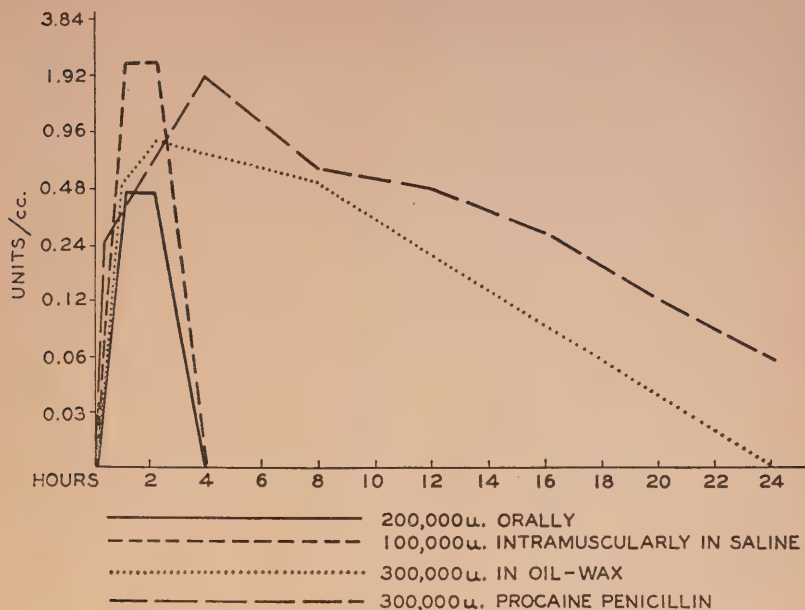
Severe local irritation may result from the topical application of penicillin in the mouth. While not serious in the sense of being dangerous to life, these reactions can be painful and most unpleasant.^{4,5}

When severe infections occur, in or about the mouth, which are caused by penicillin-sensitive organisms, the systemic use of penicillin is indicated. Several methods are available for the administration of penicillin systemically.

The first and most widely used method until a few years ago was the intramuscular administration of amorphous, or later, crystalline penicillin in saline. While this produced a satisfactory blood level, rather rapidly, it was also rapidly eliminated from the blood stream and dosages had to be repeated every 3 to 4 hours. Obviously, this method made the use of penicillin very difficult in the ambulatory dental patient, since it was hardly practical for the patient to return to the dentist every 3 hours, and impossible for the dentist to visit the patient at such frequent intervals. Furthermore, it was far from ideal even for the hospitalized patient, and much research was directed toward the determining of a suitable method of obtaining prolonged penicillin blood levels from a single injection.

The first effective method for this purpose was the peanut oil-beeswax preparation devised by Romansky. This preparation was capable of producing an effective blood level for a period of 18 to 24 hours, but was far from ideal because many patients exhibited local reactions to the beeswax or peanut oil or both.⁶ Sterile abscesses and severe urticarial reactions in the region of the injection were frequently reported.

Further research resulted in the procaine penicillin preparations which have proved very effective and safe for repository injections and have almost



entirely replaced the peanut oil-bees-wax formula. Procaine penicillin is a salt of penicillin and ordinary procaine. It is practically insoluble in water, and may be suspended in saline solution, distilled water, or nonirritating oils for injection. Since it rarely causes any reaction at the site of injection, it may be administered in the deltoid muscle as well as the upper outer quadrant of the gluteal muscle. In small children and adults with very thin deltoid muscles, the gluteal region is to be preferred. When the procaine penicillin has been deposited in the muscle bed it slowly breaks down, releasing penicillin and procaine which are then absorbed producing an effective penicillin blood level for from 24 to 36 hours. The usual dose is 300,000 units every 24 hours, although this may be increased to 600,000 units in some more severe types of infection or in infections caused by moderately susceptible organisms.

The blood level rises rather slowly from the injection of procaine penicillin preparations and to provide for a quick, high level as well as a prolonged level, several fortified procaine penicillin preparations are now marketed. These are simply otherwise standard procaine penicillin preparations to which 100,000 units per cc. of crystalline penicillin has been added. The crystalline penicillin will be rapidly absorbed giving an effective level in 30 minutes. Of course, the crystalline penicillin will be rapidly eliminated from the blood stream, but by the time it is gone, the procaine penicillin will have taken over and a prolonged blood level will result. Such preparations are used where a rapidly effective blood level is desired because of severe infections; or they may be indicated before extractions; where a high level is desired at the time of extraction with a prolonged level to follow. The standard dosage is 400,000 units, i.e. 300,000

units of procaine penicillin plus the 100,000 units of crystalline penicillin.

A third type of procaine penicillin preparation has 2 per cent of aluminum monostearate added to the otherwise standard preparation. Aluminum monostearate is water repellant and slows down the absorption of penicillin to the extent that an effective blood level is maintained for from 72 to 96 hours. However, this type of preparation never produces a very high blood level and since some dental infections are moderately resistant to penicillin, we do not consider this a desirable form to use in dentistry.

When penicillin was first introduced, it was thought that it could not be administered satisfactorily by mouth. However, when it became plentiful following World War II, further studies of this problem were made, and it was found that if sufficiently large doses were administered, effective blood levels could be attained. The drug is partially inactivated by the gastric juice and therefore it should be given between meals when the secretion of gastric juice is at a minimum. A good rule to follow is to instruct the patient not to eat sooner than $\frac{1}{2}$ hour after taking the penicillin nor to take the penicillin sooner than $1\frac{1}{2}$ hours after eating. Bacterial enzymes in the lower bowel also inactivate penicillin and absorption from the gastro-intestinal tract is irregular. For these reasons, oral doses of penicillin must be comparatively much larger than parenteral doses. A generally accepted rule has been to give 5 times as much as would be given of crystalline penicillin parenterally. This usually means a dose of 100,000 to 200,000 units every 3 to 4 hours.

If the patient follows directions and avoids taking the penicillin at meal-time, good results may be obtained by this method. However, there are so many variables involved in absorption from the gastro-intestinal tract that both the Council on Pharmacy and Chemistry of the American Medical

Association, and the Council on Dental Therapeutics, have taken the attitude that when fulminating, dangerous infections occur, it is best to use parenteral penicillin, and that the use of oral penicillin should be reserved for the mild to moderately severe infections or the convalescent stages of severe infections.

Recently there has been some tendency to give larger doses of oral penicillin less frequently. Some have advocated that 200,000 to 400,000 units be given every 6 to 8 hours, rather than 100,000 to 200,000 units every 3 or 4 hours. There is some very acceptable evidence to indicate that good results may be obtained by this type of regime. Probably the end results will not differ greatly between the two suggested methods.

Because penicillin is so rapidly excreted by the kidneys, numerous substances which inhibit kidney activity have been used experimentally to slow down the rate of excretion. One compound, probenecid, which inhibits a renal tubular mechanism by which penicillin is excreted, has proved quite effective in experimental use. It is given concomitantly with small oral doses of penicillin administered at intervals of six to eight hours. It is quite possible that penicillin tablets containing probenecid or a compound with similar activity will be widely used in the future for the oral administration of penicillin.

AUREOMYCIN, CHLORAMPHENACOL, AND TERRAMYCIN

Since Aureomycin, Chloramphenacol (Chloromycetin) and Oxytetracycline (terramycin) resemble each other in many respects, they will be considered as a group. They have a wider bacterial spectrum than has penicillin and are effective against some of the larger viruses. All of these antibiotics have been found to produce nausea, vomiting, and diarrhea in some patients. It has been found that the frequency of these reactions can be reduced by

drinking a glass of milk at the time the drug is taken.

Chloramphenacol has been reported to cause aplastic anemia in certain susceptible patients.^{7,8,9} Because of the seriousness of this condition and because other antibiotics can be used equally well for dental infections, it is our opinion that this drug is contraindicated for systemic use in dentistry at the present time.

Terramycin produces few side effects, and those that have been observed usually mild in nature, the most common being mild gastro-intestinal disturbances and, more infrequently, nausea and vomiting. It is effective against a wide spectrum of organisms including many aerobic and anaerobic Gram-positive and Gram-negative bacteria. This includes many organisms against which penicillin is ineffective. It is also effective against some of the larger viruses and spirochetes as well as many organisms of no interest in dentistry. Because of this wide range of effectiveness and the relative infrequency of reactions, terramycin would seem to be a good substitute for penicillin for systemic use in dentistry when penicillin resistant organisms are present, or when patients are sensitized to penicillin.

Aureomycin administered systemically appears to be effective in the treatment of acute herpetic stomatitis,^{10,11} though further confirmatory evidence would seem desirable. Although terramycin is known to be effective against larger viruses, little direct information in regard to its effectiveness against oral herpetic lesions is now available, but it seems reasonable to suppose that its effectiveness would be similar to that of aureomycin.

Aureomycin and terramycin troches are available for topical use in the mouth. Presumably, they have some effectiveness against Vincent's, herpetic stomatitis, and other oral infections, but available evidence is limited and their effectiveness cannot be con-

sidered conclusively proved. Local reactions on the oral mucosa have been reported from the topical use of these antibiotics.

When aureomycin and terramycin are used systemically, they are best given orally. The oral dose of aureomycin in severe infections is between 5 and 10 mg. per kilogram of body weight every four hours. Mild infections may be treated with oral doses of 5 mg. per kilogram every four hours. The usual dose of terramycin is 2 to 3 grams daily in divided portions, administered every 6 hours. However, dosage schedules are not considered entirely settled for terramycin. Both aureomycin and terramycin are most frequently given in 250 mg. capsules. Present tendencies are to administer more conservative doses of both antibiotics.

STREPTOMYCIN AND DIHYDRO-STREPTOMYCIN

These closely related antibiotics have a wide range of effectiveness, but are not effective against virus infections. It is possible to use them topically, but since it has been demonstrated¹² that organisms readily become resistant to streptomycin, it seems inadvisable to use them by this route. They produce a variety of side effects, the most serious of these being disturbances of vestibular function and, less frequently, eighth nerve deafness. Their only indication in dentistry at the present time would appear to be as a component of polyantibiotic preparations for root canal therapy and in the premedication of the valvular heart case before extractions, both to be discussed later in this paper.

TYROTHRIN AND BACITRACIN

These two antibiotics are too toxic for general systemic use and should be administered by topical application only in dentistry. Tyrothricin causes hemolysis of the red blood cells and bacitracin may cause renal tubular necrosis when administered systemi-

cally. Both of these antibiotics are effective against many of the organisms encountered in dental infections, but evidence of their clinical effectiveness is still sketchy. In one study conducted at the University of Michigan, School of Dentistry, results in the treatment of Vincent's cases using tyrothricin troches were definitely unsatisfactory.¹³ It is now known that tyrothricin may be inhibited by saliva¹⁴ which may account for its failure to produce good results in many Vincent's cases.

ANTIBIOTICS IN DENTAL CARIES CONTROL

In 1948 Hill and Kniesner¹⁵ reported upon a study of the effectiveness of a penicillin dentifrice upon dental caries in children. It had been known for some years that penicillin was capable of suppressing the growth of *Lactobacillus Acidophilus* and therefore, it was thought possible that the routine use of a dentifrice containing penicillin might cause a significant reduction in dental caries. Results were negative in this first study, but it was thought that this might have been due to failure of the subjects to routinely brush their teeth since it was an unregimented study.

In 1950, Zander reported a carefully regimented study involving a group of 202 children who for two years had used a tooth powder containing 500 units of penicillin per gram. Zander reported approximately a 54 per cent reduction in dental caries incidence among these children as compared to a control group.¹⁴ In a limited study conducted in New Zealand, Walsh and Smart were unable to demonstrate any beneficial effect from a dentifrice containing 100 units of Calcium penicillin per gram.¹⁷ In a further attempt to clarify the possible values of a penicillin dentifrice, Hill and associates conducted a regimented experiment on 492 school children for one year in the South Euclid, Ohio, public schools. The results showed a reduction of approximately 10 per cent in the number of new carious teeth and a 16 per cent

reduction in the number of new carious surfaces for the experimental group.¹⁸ I believe that nearly everyone who has followed dental caries research closely will agree that in a disease as nearly universal as dental caries, these reductions are not greatly significant. For all practical purposes then, we can say that three out of the four studies reported to date on the use of a penicillin dentifrice for control of dental caries have given negative results, and we must still consider their value as unproved.

Whenever a penicillin dentifrice is used, there are always two potential undesirable side effects: a) the production of penicillin sensitivity reactions, and b) the development of penicillin resistant organisms. To date there has been no evidence of frequent sensitization or sensitization reactions, although this always remains a potential hazard of the penicillin dentifrice. In the matter of the possible production of penicillin resistant organisms, two studies have indicated that users of a penicillin dentifrice show a higher percentage of mouth organisms resistant to penicillin than do non users of penicillin dentifrices. One study was conducted at Walpole, Mass., using the subjects of Zander's study,¹⁹ while the other was a part of Hill's study at South Euclid, Ohio.²⁰ How significant this finding may be is not clear at this time. However, the *Ad Hoc* Committee on Penicillin Dentifrices of the National Research Council cautions that the possible importance of it must be considered carefully.

Because of the equivocal evidence in support of the efficiency of penicillin dentifrices and because of the possible side effects discussed above, the Council on Dental Therapeutics, in a recently prepared report concludes in part that, "On the basis of available evidence, penicillin dentifrices should not be distributed at the present time except on a prescription basis."

While there may be justification for the use of penicillin dentifrices on the prescription basis in cases of rampant

caries, which do not respond to other forms of control, it is my candid opinion that presently available data do not justify any widespread use at this time. Certainly further careful research will be required before their exact values and limitations can be clarified.

No significant study of any other antibiotic in relationship to dental caries has been reported to date.

PROPHYLACTIC USE OF THE ANTIBIOTICS BEFORE EXTRACTIONS

It has been known for some time that individuals with damaged heart valves, usually resulting from acute rheumatic fever or other types of febrile childhood diseases, are subject to a very serious disease known as subacute bacterial endocarditis. This disease involves the implantation and growth of microorganisms on the damaged heart valves and studies in recent years have clearly shown that these organisms may be introduced into the blood stream during the extraction of teeth. It furthermore has been rather clearly demonstrated that prophylactic use of the antibiotics before extraction, can reduce the incidence of post-extraction bacteremias. Exact dosage schedules for this purpose have not been entirely agreed upon, but in a recently prepared report the Council on Dental Therapeutics stated the minimum precautionary measures should be as follows: "About one-half hour before the operation, the patient should receive intramuscularly 300,000 units of crystallin penicillin with 600,000 units of procaine penicillin. These dosage forms are available separately or in combination. If desired, the crystalline penicillin alone may be given parenterally, along with at least 200,000 units of the oral form at once and at intervals of 4 to 6 hours thereafter. Post-operatively the patient should receive an additional injection of 600,000 units of procaine penicillin intramuscularly 18 to 24 hours later. As an alternative, the oral preparation should be adminis-

tered periodically for 48 hours. It is advisable, particularly in patients with extensive periodontal infection or apical abscesses, to start the antibiotic therapy the day before the operation and continue one or two days after."

Some now believe that in addition to the penicillin, dihydrostreptomycin or streptomycin should be administered prophylactically before extractions because of the known fact that penicillin-resistant organisms are sometimes found in oral infections. Pre-operative administration of 300,000 units of procaine penicillin plus one gram of dihydrostreptomycin is now frequently advocated with a repeat dose 18 to 24 hours later. Some investigators have also recommended aureomycin hydrochloride for this purpose since it has a wider bacterial spectrum than penicillin. If used, aureomycin should be given for 24 hours before and 24 hours after the extraction in standard dosages.

It is difficult to say which of the several proposed methods for protection against post-extraction bacteremia is most efficient. However, we feel that in every case of known valvular damage and in all cases with a history of acute rheumatic fever or other febrile diseases which might cause damaged heart valves, the patient should be given at least the minimum protection recommended by the Council on Dental Therapeutics.

ANTIBIOTICS IN VINCENT'S INFECTION

There seems to be acceptable evidence that the acute phase of Vincent's stomatitis and possibly some other types of infectious stomatitis may respond to topical or systemic antibiotic therapy. In instances of true Vincent's angina with extensive throat involvement or in instances where Vincent's has spread to extra-oral areas of the body, systemic use of penicillin is indicated and is usually effective. The possible use of aureomycin in herpetic stomatitis has been previously discussed. However, we believe a very con-

servative attitude is justified toward the topical use of the antibiotics in periodontia. Perhaps our attitude can be summarized by quoting from the report of the evaluating committee on the treatment of periodontal disease at the Michigan Workshop held in Ann Arbor in September, 1951. This committee reported in part, "Antibacterial drugs can be used to advantage in combatting acute infectious phases of some types of periodontal diseases. Antibiotics, particularly penicillin, aureomycin, and perhaps chloromycetin and terramycin have been found to be effective in treating the acute phase of periodontal infection. Unfortunately, the possibility exists of sensitization of the patient to those agents and the development of refractory bacterial strains if inadequate dosage is used. This outcome is particularly frequent when therapy by lozenges or troches is employed."²¹

In view of the above and the previously discussed hazards of topical antibiotic therapy, it is our opinion that topical use of the antibiotics should be restricted to those periodontal conditions in which they are of known value, where the infection is severe and where other methods of treatment are not deemed adequate. In any case in which they are used antibiotics should not be considered a cure, but merely an adjunct to the usual procedures for restoring good mouth hygiene.

ANTIBIOTICS IN ROOT CANAL THERAPY

It has been known for some time that be no doubt that the antibiotics have an important place in the treatment of severe periapical infections by the systemic route. When a patient presents with a severe periapical infection with swelling, fever, and malaise, systemic antibiotic therapy should be used as previously outlined in this paper.

The most extensive application of the antibiotics in endodontics has been topically within the pulp chamber. Penicillin was first widely used for

this purpose, but was found inadequate by itself because of the frequent presence of penicillin-resistant organisms.^{20,21} In our hands, a combination of penicillin and streptomycin was much more satisfactory than penicillin alone, but we found that this combination frequently eliminated all bacteria only to leave a residual growth of yeasts. This same finding was observed by other investigators and Grossman introduced a polyantibiotic mixture containing a fungicide to overcome this difficulty.²² This preparation has been known as P.B.S.C. paste and contains penicillin, bacitracin, streptomycin, and sodium caprylate in a silicone vehicle. In our hands, this has been one of the most effective of the antibiotics or antibiotic combinations suggested for use in endodontics. However, we remain conservatively minded and have not adopted any antibiotic preparation for routine use in our clinic at the University of Michigan.

This viewpoint is not due to any arbitrary objection to the antibiotics *per se*, but in our hands, even with the P.B.S.C. preparation, our results have not been greatly better than those we have been obtaining with previously used drugs, principally camphorated p. chlorophenol. Furthermore, when we have compared our results with those reported by Grossman, we have not seen any great advantage for the antibiotics. While space will not permit a detailed analysis of these results in this paper, they are such that we have been forced to conclude that at least in our hands, the antibiotic preparations which we have used up to now do not offer any spectacular advantage over some other types of effective but non-irritating drugs. Recent studies by Auerbach²⁵ appear to confirm our findings.

Another disadvantage of antibiotics in root canal treatments is the difficulty of obtaining accurate cultures. Buchbinder and Bartels²⁶ as well as many other investigators have clearly shown the necessity for inhibition of

antibiotics used in root canals when cultures are taken. Again space will not permit a detailed analysis of the difficulties involved in this procedure, but they are such as to be very hard to overcome in the average practice.

Another, though less difficult problem to surmount in the use of antibiotics in root canal therapy is the obtaining and maintaining of suitable antibiotic preparations for introduction into the root canals.

Because of the several problems which have been reviewed above we do not feel that antibiotic therapy is suitable for routine use in endodontics at the present time. However, we are continuing to use them experimentally and their use in selected cases in practice may be indicated. Furthermore, I would be very happy indeed, if someone would find a suitable antibiotic or antibiotic mixture plus a suitable culture medium to use with it, which would give results far superior to presently available drugs.

CONCLUSION

The introduction of the antibiotics into dental practice has given us a most valuable addition to our therapeutic armamentarium. Rationally and conservatively used, the antibiotics can be of inestimable value in many phases of dental practice. However, they must not be considered a substitute for many basic principles of practice that have been established over the years, and to rely on the antibiotics alone in many instances, is an invitation to failure.

Many known members of the antibiotic group now under experimental study, show great promise and future years will undoubtedly see the introduction of new and more effective members of this group. Every dentist should most certainly keep himself well informed on developments in antibiotic therapy.

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Mass Control of Dental Caries by Fluoridation of a Public Water Supply

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IN PARTS of Canada where no fluoride occurs in the water supplies, tooth decay affects about 99 per cent of people at some time in their lives. It leads to pain, infection both local and systemic, and to loss of teeth. These often result in an inability to eat comfortably and thus affect the choice of foods and the ability of the body to utilize them. Loss of teeth in early childhood affects the growth pattern of the jaws and face. The remaining teeth shift and become irregular, creating spaces for the wedging of food and in this and other ways contribute to early periodontal disease in the adult. Oral infections from abscessed teeth contribute in turn to general ill health and can give rise to conditions in other parts of the body which cause disability and death.

The cost of giving even partial treatment for tooth decay, dento-facial abnormalities, and periodontal disease is high. Figures from the Canadian Sick-ness Survey (1) show that in 1950-51 Canadians paid nearly 33 million dollars for dental care. The total amount paid directly to physicians for the treatment of all other conditions was \$87,700,000 and the total amount paid for all hospital care was \$46,500,000. This places dental services third from the top in expenditures made directly for health services. But the backlog of oral ill health is so great that this cost covers only that part the dental profession is able to cope with—less than one quarter of the total.

These are some of the reasons why

the Department of National Health and Welfare at Ottawa, in addition to other interests in the field of preventive dentistry, has been actively engaged in the study of water fluoridation over the past years. We do not know the whole story yet but everything we do know to date about it is good both from the standpoint of oral health and economy. It shows promise of being not only the most important event in the history of preventive dentistry, but also one of the most important in the whole public health field.

The Brantford-Sarnia-Stratford water fluoridation caries study, reported by the Department of National Health and Welfare in 1951 (2) and again in 1952 (3), has now been continued by further surveys in Brantford and Sarnia during the first quarter of 1953. The present report brings together and discusses the results of all surveys of the study to date.

The Brantford-Sarnia-Stratford water fluoridation caries study was undertaken with a view to finding out whether the raising of the fluoride content of a previously fluoride-free water supply to 1 ppm. by the mechanical addition of sodium fluoride reduces the incidence of dental caries to that which obtains where water supplies derive about 1 ppm. of fluoride from deposits in the earth. Studies in various parts of the world (4), and later confirmed by our findings at Stratford, Ontario (5), had shown that where water-borne fluorides occurred naturally in a con-

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centration of about 1 ppm., caries incidence was about 65 per cent lower than in places having fluoride-free water supplies, without any accompanying detectable ill effects.

HISTORY

The active interest of Dr. W. L. Hutton, the Medical Officer of Health of Brant County, Ontario, in the prevention of tooth decay led to the addition of sodium fluoride to the Brantford water supply in June 1945. A concentration of 1 to 1.2 ppm. of fluoride has been maintained in the water supply continuously since that time.

A study was immediately undertaken by the school dentist, Dr. B. Linscott, and this was subsequently reported in the *Canadian Journal of Public Health* (6). However, the need for control groups and the use of more extensive facilities than were available to the local Department of Health led to the request that the Department of National Health and Welfare undertake a study. This Department then made arrangements to compare the dental caries experience in Brantford over a period of time with that in Sarnia where the fluoride content of the community water supply is negligible, and with that in Stratford where the water supply, obtained from deep wells, has contained 1.3 ppm. from natural deposits continuously since 1917. As Brantford had already undertaken the technical work connected with the addition of sodium fluoride to the water and had arranged for daily water analysis under the supervision of Mr. Don Williams, the Brantford Water Works Engineer, the only responsibility assumed by the Department of National Health and Welfare was that of conducting a study of the dental effects.

Surveys were conducted at Brantford, Sarnia and Stratford in 1948 and 1951, and in Brantford and Sarnia in 1953. Since for each city the surveys have been repeated at about the same time of year, the 1953 survey in Stratford will begin in October. The results of

this survey in Stratford will be reported subsequently.

SELECTION OF CHILDREN FOR EXAMINATION

The study compares a group of children (Brantford) who have used a mechanically fluoridated water supply continuously since June 1945, and before that date did not use fluoridated water, with a group (Sarnia) who continuously since birth have not used fluoridated water, and a second group (Stratford) who have used naturally fluoridated water continuously since birth. "Continuously" is defined as including periods of absence of six weeks or less. Residence eligibility is determined from information supplied by the parents. Secondary schools, as well as primary schools, are canvassed for eligibles.

On the basis of data concerning the ordinary incidence of dental caries, it was decided to examine at least 500 children in each group, 6-8, 9-11 and 12-14. Since eligible children in Brantford totalled over 2,500, sampling was indicated there and was carried out systematically by school and grade, beginning with a random start for each age group in the manner described in "A Suggested Methodology for Fluoridation Surveys in Canada" (7). Although the lower incidence of caries found in Stratford, and by 1951 in Brantford, indicated that a smaller sample size could be used, the total of at least 500 has been maintained where possible. No sampling was carried out in Sarnia in 1953, although for one age group (6-8) the total of eligibles might have been considered sufficient for effective sampling.

The totals of eligible children and of those examined are shown for each city by age group in Table 1 for 1948, 1951 and 1953. For Brantford, the total chosen for examination by sampling is also given.

TABLE 1

TOTAL CHILDREN ELIGIBLE AND TOTAL EXAMINED, BY AGE GROUP
Brantford, Sarnia, and Stratford, 1948, 1951 and 1953

Age Group	Brantford (population 1951, 36,727)									
	Total Eligible			No. Chosen for Exam.			No. Examined			
	1948	1951	1953	1948	1951	1953	1948	1951	1953	
6- 8	963	1,053	Not Available	624	607	536	619	579	526	
9-11	816	803		602	592	551	595	578	548	
12-14	747	756		600	604	521	593	585	518	
Total	2,526	2,612		1,826	1,803	1,608	1,807	1,742	1,592	
	Sarnia ★ (population 1951, 34,697)					Stratford ↗ (population 1951, 18,785)				
Age Group	Total Eligible			No. Examined			Total Eligible		No. Examined	
	1948	1951	1953	1948	1951	1953	1948	1951	1948	1951
6- 8	677	720	840	669	691	807	511	508	505	497
9-11	580	634	699	571	619	674	434	471	432	456
12-14	495	514	553	486	506	539	376	405	371	395
Total	1,752	1,868	2,092	1,726	1,816	2,020	1,321	1,384	1,308	1,348

★ The population of Sarnia has increased rapidly in recent years. According to the 1941 Census the population was 18,734, and by municipal estimate it was 23,841 in 1949. For all three surveys, the children of nearby Point Edward which is served by the Sarnia water system, and which had a population of 1,838 in 1951, were included in the Sarnia survey. However, other outlying areas which were annexed by the city of Sarnia in 1953 were not included in the 1953 survey.

↗ Survey not yet done in Stratford for 1953

METHOD OF EXAMINATION

All examinations of the study have been conducted by the same examiner (H.K.B.), using the same portable dental examining light Castle Specialist No. 46) kept at a constant distance, plane mouth mirrors and No. 5 Cleveland explorers. The lowest limit in size for a caries lesion was defined as one in which the point of the explorer would stick and resist direct withdrawal or in which softness was palpable. Hard enamel surfaces and enamel imperfections were not recorded as caries. Interproximal roughnesses capable of holding the explorer

point were recorded as caries. Oral hygiene was also recorded as "good," "fair," "poor." All observable mottling of enamel was recorded.

A diagrammatic type of chart depicting both permanent and deciduous teeth was used for recording. Both deciduous and permanent tooth decay was recorded in the detail necessary for analysis by number of surfaces affected. However, for the purposes of this report only DMF (decayed + missing + filled) permanent teeth and df (decayed teeth + filled teeth) primary teeth have been tabulated.

FINDINGS

The hypothesis that a concentration of at least 1 ppm. of fluoride in the drinking water inhibits the development of dental caries in the teeth of the users of the water appears to be confirmed by the results of this study to date. There has been a constant decrease from survey to survey (1948-51-53) in the extent of caries at Brantford where fluoridation of the public water supply was begun in 1945.

As the study does not include a pre-fluoridation survey, the full amount of benefit which the Brantford teeth have received since fluoridation cannot be illustrated directly from the data for Brantford. Some idea of the extent of benefit can be obtained by comparison with the data for Sarnia, a city which has fluoride-free water and is sufficiently similar in size, location, and other attributes for purposes of the comparison. By 1948 the Brantford data were not greatly different from those for Sarnia. By 1953 the proportion of Brantford children age 6-8 years with caries-free permanent teeth was over twice as great as for Sarnia, and the mean DMF tooth rate per child age 6-8 was 64 per cent lower for Brantford than for Sarnia. The benefit received by the 9-11 and 12-14 age groups was also considerable by 1953, but not as great as by those age 6-8 years.

The Stratford data are presented in the following tables for the purposes of indicating the degree of caries reduction which the Brantford children might be expected to attain after sufficient time has elapsed for those born since the beginning of fluoridation (June 1945) and to produce a full set of permanent teeth. This requires a period of about 12 years from the time of birth. As yet only the teeth of the Brantford 6-8 year age group may be compared with those of the corresponding Stratford age group with any reasonable expectation of finding an equal degree of caries resistance.

In the sections following, detailed analysis is given of the results of all surveys of the study to date. Data are

presented for (1) all permanent teeth, (2) first permanent (six-year) molars, (3) permanent upper incisors, and (4) deciduous teeth. Statistics are given separately for first permanent molars since these are the teeth which first reach the stage of having been fully calcified during the period of fluoridation. In the case of the upper incisors, the opportunity is afforded of observing the topical effect on teeth which had been formed and calcified before the institution of fluoridation. Except for upper incisors and deciduous teeth, data are presented for each of the three age groups, 6-8, 9-11, and 12-14, which were chosen because of their relation to the tooth eruption pattern.

The indices used in this report to measure the extent of caries are (a) percentage of children having caries-free teeth, (b) tooth mortality rate (calculated only for all permanent teeth), and (c) mean DMF permanent teeth (for deciduous, mean df teeth). These indices and their standard errors* are presented in turn for each type of tooth mentioned above.

Percentages, etc.

In a group of children, any factor bringing about a decrease in the number of teeth affected by caries will tend to also bring about an increase in the number of caries-free children in this group (8). Table 2, and Fig. I, show that, since the first survey in 1948, a significant increase has been occurring in the proportion of Brantford children who have caries-free permanent teeth. However, while Brantford had improved significantly over the Sarnia posi-

* The standard error is a measure of the variation which is associated with the sampling process. The difference between two index values is said to be statistically significant when the probability of it arising from chance or sampling variation, i.e., rather than from some specific factor such as fluoridation, is below some agreed value. The agreed levels of statistical significance are arbitrary but are generally assumed to be the two standard error and three standard error levels. The probability of obtaining, by chance, a difference of the magnitude of two standard errors between two observed values is about 0.0455 or just below 5 per cent. The odds against such a difference occurring are, therefore, about 21 to 1. For the three standard error level, the probability is less than one per cent (0.27 per cent) and the odds are 369 to 1 against this occurrence by chance. When difference of these magnitudes are found, particularly those as great as three standard errors, we may feel quite confident in discussing them in terms of our hypothesis.

TABLE 2

PERCENTAGE OF CHILDREN HAVING CARIES-FREE PERMANENT TEETH

Age Group	Year	Percentage of Children Having Caries-Free Permanent Teeth and Standard Error of Percentage					
		Sarnia		Brantford		Stratford	
6-8	1948	40.96	± 1.901	46.69	± 2.005	78.42	± 1.831
	1951	32.71	± 1.785	59.24	± 2.043	65.19	± 2.136
	1953	32.09	± 1.644	69.20	± 2.013	...	...
9-11	1948	6.13	± 1.001	5.71	± 0.950	52.08	± 2.404
	1951	3.55	± 0.749	17.13	± 1.566	35.75	± 2.244
	1953	3.56	± 0.718	23.36	± 1.809	...	...
12-14	1948	0.62	± 0.350	1.18	± 0.447	27.22	± 2.310
	1951	1.19	± 0.484	4.27	± 0.839	22.03	± 2.084
	1953	1.11	± 0.449	8.69	± 1.238	...	...
Age Group	Year	Differences in Percentage of Children Having Caries-Free Permanent Teeth					
		Inter-City			Inter-Year		
		Sarnia-Brantford	Brantford-Stratford	Years	Sarnia	Brantford	Stratford
6-8	1948	5.73 S	31.73 SS	1948-51	-8.25 SS	12.65 SS	-13.23 SS
	1951	26.53 SS	5.95 S	1951-53	-0.62 NS	9.96 SS	...
	1953	37.11 SS	...	1948-53	-8.87 SS	22.51 SS	...
9-11	1948	-0.42 NS	46.37 SS	1948-51	-2.58 S	11.42 SS	-16.33 SS
	1951	13.58 SS	18.62 SS	1951-53	0.01 NS	6.23 S	...
	1953	19.80 SS	...	1948-53	-2.57 S	17.65 SS	...
12-14	1948	0.56 NS	26.04 SS	1948-51	0.57 NS	3.09 SS	-5.19 NS
	1951	3.08 SS	17.76 SS	1951-53	-0.08 NS	4.42 S	...
	1953	7.58 SS	...	1948-53	0.49 NS	7.51 SS	...

S Statistically significant at two standard error level;)See p.9 for
 SS Statistically significant at three standard error level;)discussion of
 NS Not statistically significant (p greater than 5%).)statistical
 significance.

Decrease indicated by minus sign.

... Survey not yet done in Stratford for 1953.

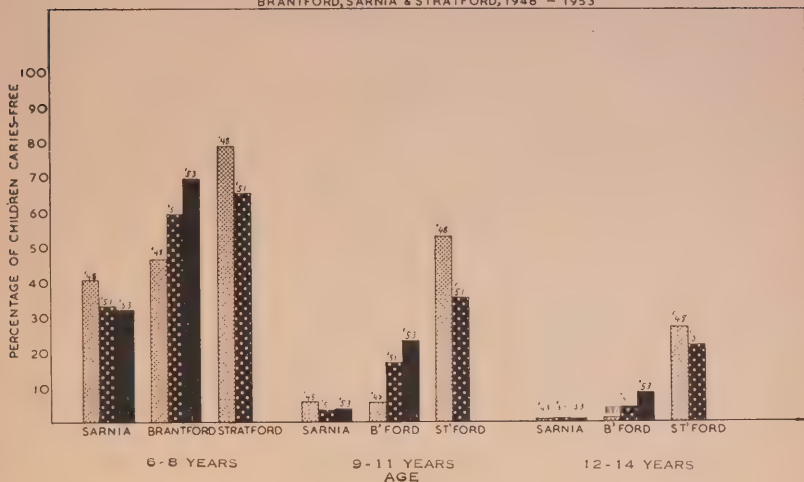
Standard errors shown have not been adjusted for finite population correction; in relation to the individual index values, the standard errors shown are therefore over-stated, but the comparison of pairs of values is not affected.

tion, the last Stratford data obtained (1951) could be expected to show a higher percentage of caries-free teeth than Brantford. At that time not even the Brantford 6-8 year age group could yet be compared with that age group in Stratford, as many of them had been born and had calcified considerable

enamel before the Brantford water was fluoridated.

Decreases in percentage caries-free for all permanent teeth occurred between successive surveys for both Sarnia and Stratford. Some of these inter-year differences were not attributable to sampling and undoubtedly those for

FIG. I

PERCENTAGE OF CHILDREN WITH CARIES FREE PERMANENT TEETH
BRANTFORD, SARNIA & STRATFORD, 1948 - 1953

Sarnia contributed to the Brantford-Sarnia differences.

The 1953 data for Stratford are being looked forward to with interest. When compared with that for Stratford in 1948 and 1951, the 1953 Brantford data indicate that the 6-8 age group in Brantford has probably improved in per cent caries-free for all permanent teeth to a point very near the Stratford level. This is the first age group in Brantford whose permanent tooth eruption pattern has developed far enough since the beginning of fluoridation to permit of a comparison of caries experience with that of a corresponding age group in Stratford on a basis of equality in relation to enamel fully calcified while fluoridated water was being used. All observable permanent tooth enamel of each of these two groups was calcified under the influence of fluoridated water, the one with well-water fluoride from ground deposits and the other from fluoride mechanically added to the water. As this particular group of Brantford children, born since 1945, become older and more of their permanent teeth erupt,

further comparisons on this basis with Stratford in relation to the rest of the permanent dentition will become possible.

Tooth Mortality

The extent of permanent tooth mortality is measured by the number, per 100 children, of permanent teeth extracted or still in the mouth but irreparable. Both preventive and treatment measures may have a decided effect on tooth mortality rates.

In Table 3, mean tooth mortality per 100 children is shown for the Brantford-Sarnia-Stratford surveys to date. The picture here is somewhat different than for percentage caries-free for all permanent teeth (Table 2). Although there has been a decrease in tooth mortality in Brantford between successive surveys, these decreases are not all significant. Further, even by the time of the first survey, mean tooth mortality in Brantford was much lower than in Sarnia, for all age groups.

In 1948 and 1951, Brantford had a higher tooth mortality than Stratford for the two older age groups but the

TABLE 3

MEAN M+X (MISSING AND IRREPARABLE) PERMANENT TEETH PER 100 CHILDREN

Age Group	Year	Mean Tooth Mortality (M+X Permanent Teeth) Per 100 Children and Standard Error of Mean					
		Sarnia		Brantford		Stratford	
6- 8	1948	7.03 $\pm$ 1.367		1.62 $\pm$ 0.641		0.99 $\pm$ 0.441	
	1951	10.42 $\pm$ 1.682		1.21 $\pm$ 0.516		1.41 $\pm$ 0.602	
	1953	8.05 $\pm$ 1.455		2.09 $\pm$ 0.731		... ...	
9-11	1948	51.31 $\pm$ 4.348		28.91 $\pm$ 3.016		5.09 $\pm$ 1.445	
	1951	52.02 $\pm$ 3.953		23.01 $\pm$ 2.522		4.82 $\pm$ 1.367	
	1953	47.33 $\pm$ 4.097		14.23 $\pm$ 2.059		... ...	
12-14	1948	137.24 $\pm$ 7.985		84.32 $\pm$ 5.602		18.87 $\pm$ 2.911	
	1951	125.30 $\pm$ 8.473		62.56 $\pm$ 4.592		20.76 $\pm$ 3.496	
	1953	132.10 $\pm$ 8.820		47.30 $\pm$ 4.667		... ...	
Differences in Mean Tooth Mortality (M+X Permanent Teeth) Per 100 Children							
Age Group	Year	Inter-City		Inter-Year			
		Sarnia-Brantford	Brantford-Stratford	Years	Sarnia	Brantford	Stratford
6-8	1948	- 5.41 SS	- 0.63 NS	1948-51	3.39 NS	- 0.41 NS	0.42 NS
	1951	- 9.21 SS	0.20 NS	1951-53	- 2.37 NS	0.88 NS	...
	1953	- 5.96 SS	...	1948-53	1.02 NS	0.47 NS	...
9-11	1948	-22.40 SS	-23.82 SS	1948-51	0.71 NS	- 5.90 NS	-0.27 NS
	1951	-29.01 SS	-18.19 SS	1951-53	- 4.69 NS	- 8.78 S	...
	1953	-33.10 SS	...	1948-53	- 3.98 NS	-14.68 SS	...
12-14	1948	-52.92 SS	-65.45 SS	1948-51	-11.94 NS	-21.76 SS	1.89 NS
	1951	-62.74 SS	-41.80 SS	1951-53	6.80 NS	-15.26 S	...
	1953	-84.80 SS	...	1948-53	- 5.14 NS	-37.02 SS	...

S Statistically significant at two standard error level;)See p.9 for
 SS Statistically significant at three standard error level; discussion of
 NS Not statistically significant (p. greater than 5%).)statistical
 significance.

Decrease indicated by minus sign.

... Survey not yet done in Stratford for 1953.

Standard errors shown have not been adjusted for finite population correction; in relation to the individual index values, the standard errors shown are therefore over-stated, but the comparison of pairs of values is not affected

rates for the 6-8 age group approximated the Stratford level in both these years. However, the Brantford-Sarnia comparison indicates that, as well as the fluoridation of the Brantford water supply, other factors such as differences in preventive or treatment meas-

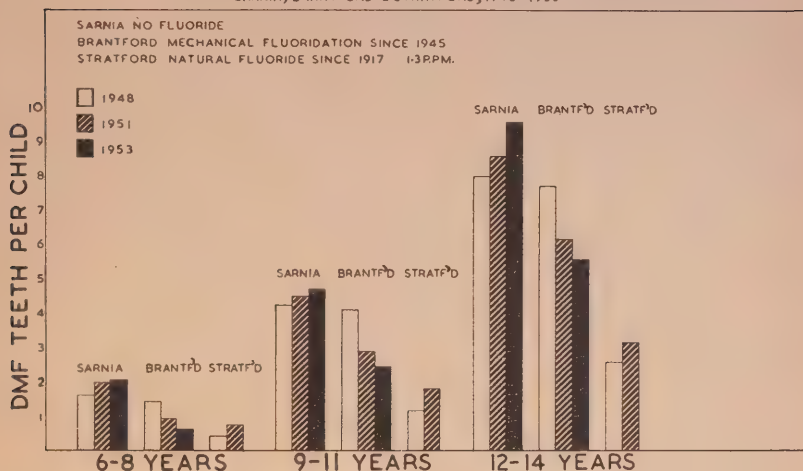
ures are probably affecting the Brantford position.

Mean DMF Permanent Teeth

The data concerning mean DMF permanent teeth (Table 4, Fig. II) present essentially the same picture as did the

FIG. II
MEAN DMF PERMANENT TEETH PER CHILD

SARNIA, BRANTFORD & STRATFORD, 1948-1953



data relating to the percentage of caries-free children. By 1951, Brantford had improved considerably over the Sarnia level but as yet it was too early to expect Brantford to equal the Stratford picture in any of the age groups.

An enamel calcification table read in conjunction with the data of Table 4 suggests a relationship between the degree of caries-resistance of enamel and the status of its development at the time the child began to drink fluoridated water. While some degree of caries resistance is evidently conferred upon completed enamel by contact with fluoridated water, the major benefit appears to be derived from drinking it during the total period of enamel formation.

First Permanent Molars

The first permanent molar (six-year molar) is the most caries-susceptible tooth in the mouth. In the 9-11 and 12-14 age groups, where most of the effect of fluoridation to date would be topical, there was no significant difference between the index values for Brantford

and Sarnia until 1951 and, as expected, more caries was still evident in Brantford than in Stratford. Although in 1953 there was significantly less caries in these teeth in Brantford than in Sarnia for ages 9-11 and 12-14, it is expected that the 1953 Stratford data will still show less caries than Brantford.

Much greater improvement is indicated by the data for these teeth in the 6-8 age group. The 1953 survey afforded the first opportunity to observe in Brantford a sample of these teeth, in the 6-8 year group, which had been fully calcified, erupted, and exposed in the mouth for a sufficient length of time (more than a year) for caries activity to progress to a point where comparisons with the control groups could be satisfactorily made. As well as being less carious than those in Sarnia, these teeth in the 6-8 year-olds in Brantford in 1951 had almost as little caries as those of the 6-8 year-olds in Stratford. The 1953 values for Brantford for percentage caries-free and mean DMF for this age group and type of tooth are of the same order as the

TABLE 4

MEAN DMF (DECAYED, MISSING, FILLED) PERMANENT TEETH PER CHILD

Age Group	Year	Mean DMF Permanent Teeth Per Child and Standard Error of Mean					
		Sarnia	Brantford	Stratford			
6- 8	1948	1.60 $\pm$ 0.064	1.41 $\pm$ 0.064	0.41 $\pm$ 0.040			
	1951	1.99 $\pm$ 0.065	0.93 $\pm$ 0.055	0.75 $\pm$ 0.055			
	1953	2.05 $\pm$ 0.062	0.63 $\pm$ 0.049	... ..			
9-11	1948	4.21 $\pm$ 0.114	4.07 $\pm$ 0.093	1.13 $\pm$ 0.072			
	1951	4.48 $\pm$ 0.102	2.85 $\pm$ 0.085	1.76 $\pm$ 0.081			
	1953	4.67 $\pm$ 0.093	2.47 $\pm$ 0.080	... ..			
12-14	1948	7.94 $\pm$ 0.200	7.68 $\pm$ 0.164	2.55 $\pm$ 0.130			
	1951	8.55 $\pm$ 0.187	6.10 $\pm$ 0.144	3.12 $\pm$ 0.144			
	1953	9.54 $\pm$ 0.192	5.51 $\pm$ 0.157	... ..			
Differences in Mean DMF Permanent Teeth Per Child							
Age Group	Inter-City			Inter-Year			
	Year	Sarnia-Brantford	Brantford-Stratford	Years	Sarnia	Brantford	Stratford
6- 8	1948	-0.19 S	-1.00 SS	1948-51	0.39 SS	-0.48 SS	0.34 SS
	1951	-1.06 SS	-0.18 SS	1951-53	0.06 NS	-0.30 SS	...
	1953	-1.42 SS	...	1948-53	0.45 SS	-0.78 SS	...
9-11	1948	-0.14 NS	-2.94 SS	1948-51	0.27 NS	-1.22 SS	0.63 SS
	1951	-1.63 SS	-1.09 SS	1951-53	0.19 NS	-0.38 SS	...
	1953	-2.20 SS	...	1948-53	0.46 SS	-1.60 SS	...
12-14	1948	-0.26 NS	-5.13 SS	1948-51	0.61 S	-1.58 SS	0.57 SS
	1951	-2.45 SS	-2.98 SS	1951-53	0.99 SS	-0.59 S	...
	1953	-4.03 SS	...	1948-53	1.60 SS	-2.17 SS	...

S Statistically significant at two standard error level;)See p.9 for
 SS Statistically significant at three standard error level; discussion of
 NS Not statistically significant (p greater than 5%).)statistical
 significance.

Decrease indicated by minus sign.

... Survey not yet done in Stratford for 1953.

Standard errors shown have not been adjusted for finite population correction; in relation to the individual index values, the standard errors shown are therefore over-stated, but the comparison of pairs of values is not affected.

Stratford 1948 and 1951 values. (See Tables 5 and 6).

Upper Permanent Incisors

The upper permanent incisors show more dramatically than any other type of tooth the effect of water-borne

fluorides. The enamel of these teeth for the Brantford 12-14 year age group in 1953 was for the most part calcified 8 to 10 years ago, i.e., before fluoride was added to the water there; yet the percentage of children caries-free in that age group is greater than that for

TABLE 5

PERCENTAGE OF CHILDREN HAVING CARIES-FREE FIRST PERMANENT MOLARS

		Percentage of Children Having Caries-Free First Permanent Molars and Standard Error of Percentage					
Age Group	Year	Sarnia		Brantford		Stratford	
6- 8	1948	41.26 $\pm$ 1.904		46.85 $\pm$ 2.006		78.42 $\pm$ 1.831	
	1951	32.71 $\pm$ 1.785		59.76 $\pm$ 2.038		65.19 $\pm$ 2.136	
	1953	32.34 $\pm$ 1.646		70.15 $\pm$ 1.996		... ...	
9-11	1948	6.65 $\pm$ 1.046		6.22 $\pm$ 0.989		52.31 $\pm$ 2.403	
	1951	4.20 $\pm$ 0.806		17.82 $\pm$ 1.591		36.40 $\pm$ 2.253	
	1953	2.97 $\pm$ 0.657		23.36 $\pm$ 1.809		... ...	
12-14	1948	1.03 $\pm$ 0.451		2.02 $\pm$ 0.575		33.69 $\pm$ 2.454	
	1951	3.36 $\pm$ 0.806		4.79 $\pm$ 0.884		26.33 $\pm$ 2.215	
	1953	1.67 $\pm$ 0.557		9.46 $\pm$ 1.288		... ...	
Differences in Percentage of Children Having Caries-Free First Permanent Molars							
		Inter-City		Inter-Year			
Age Group	Year	Sarnia-Brantford	Brantford-Stratford	Years	Sarnia	Brantford	Stratford
6- 8	1948	5.59 S	31.57 SS	1948-51	-8.55 SS	12.91 SS	-13.23 SS
	1951	27.05 SS	5.43 NS	1951-53	-0.37 NS	10.39 SS	...
	1953	37.81 SS	...	1948-53	-8.92 SS	23.30 SS	...
9-11	1948	-0.43 NS	46.09 SS	1948-51	-2.45 NS	11.60 SS	-15.91 SS
	1951	13.62 SS	18.58 SS	1951-53	-1.23 NS	5.54 S	...
	1953	20.39 SS	...	1948-53	-3.68 S	17.14 SS	...
12-14	1948	0.99 NS	31.67 SS	1948-51	2.33 S	2.44 S	-7.36 S
	1951	1.43 NS	21.54 SS	1951-53	-1.69 NS	4.67 S	...
	1953	7.79 SS		1948-53	0.64 NS	7.44 SS	...

S Statistically significant at two standard error level;)See p.9 for
 SS Statistically significant at three standard error level;)discussion of
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 significance.

Decrease indicated by minus sign.

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the corresponding age group in Sarnia. This difference was also considerable for the 1951 survey. This must be presumed to be due to the topical effect of the fluoride on already calcified enamel. (See Tables 7 and 8).

In the Brantford 9-11 year age group

in 1953, the enamel of the incisors was calcified to a much lesser degree before fluoridation began than that of the 12-14 year age group, and here the Stratford condition is much more closely approached. However, not until the present 6-8 year age group in Brant-

TABLE 6

MEAN DMF (DECAYED, MISSING, FILLED) FIRST PERMANENT MOLARS PER CHILD

Age Group	Year	Mean DMF First Permanent Molars Per Child, and Standard Error of Mean					
		Sarnia	Brantford	Stratford			
6- 8	1948	1.55 ± 0.061	1.39 ± 0.063	0.41 ± 0.040			
	1951	1.96 ± 0.063	0.92 ± 0.055	0.75 ± 0.055			
	1953	1.99 ± 0.058	0.61 ± 0.048	... ..			
9-11	1948	3.15 ± 0.051	3.26 ± 0.048	1.07 ± 0.065			
	1951	3.43 ± 0.043	2.52 ± 0.064	1.62 ± 0.072			
	1953	3.56 ± 0.037	2.26 ± 0.067	... ..			
12-14	1948	3.62 ± 0.036	3.65 ± 0.033	1.76 ± 0.082			
	1951	3.63 ± 0.040	3.42 ± 0.045	1.99 ± 0.080			
	1953	3.76 ± 0.030	3.15 ± 0.057	... ..			
Differences in Mean DMF First Permanent Molars Per Child							
Age Group	Year	Inter-City		Inter-Year			
		Sarnia-Brantford	Brantford Stratford	Years	Sarnia	Brantford	Stratford
6- 8	1948	-0.16 NS	-0.98 SS	1948-51	0.41 SS	-0.47 SS	0.34 SS
	1951	-1.04 SS	-0.17 S	1951-53	0.03 NS	-0.51 SS	...
	1953	-1.38 SS	...	1948-53	0.44 SS	-0.78 SS	...
9-11	1948	0.11 NS	-2.19 SS	1948-51	0.28 SS	-0.74 SS	0.55 SS
	1951	-0.91 SS	-0.90 SS	1951-53	0.13 S	-0.26 S	...
	1953	-1.30 SS	...	1948-53	0.41 SS	-1.00 SS	...
12-14	1948	0.03 NS	-1.89 SS	1948-51	0.01 NS	-0.23 SS	0.23 S
	1951	-0.21 SS	-1.43 SS	1951-53	0.13 S	-0.27 SS	...
	1953	-0.61 SS	...	1948-53	0.14 S	-0.50 SS	...

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ford becomes the 9-11 age group can anything like equality with that age group for Stratford be expected.

Deciduous Teeth

Our experience has been that a df index for all erupted primary teeth does

not provide as reliable an index of caries experience as does the DMF index for all erupted permanent teeth. Extraction of more d (decayed) teeth in a given community in one year than in another, or more extractions in one community than in another may affect

TABLE 7

PERCENTAGE OF CHILDREN HAVING CARIES-FREE PERMANENT UPPER INCISORS

Age Group	Year	Percentage of Children Having Caries-Free Permanent Upper Incisors and Standard Error of Percentage					
		Sarnia	Brantford	Stratford			
9-11	1948	76.53 $\pm$ 1.774	82.86 $\pm$ 1.544	97.07 $\pm$ 0.807			
	1951	80.94 $\pm$ 1.580	94.46 $\pm$ 0.948	96.93 $\pm$ 0.812			
	1953	74.33 $\pm$ 1.683	96.17 $\pm$ 0.817	... ..			
12-14	1948	53.91 $\pm$ 2.261	56.16 $\pm$ 2.037	95.69 $\pm$ 1.053			
	1951	53.36 $\pm$ 2.217	69.40 $\pm$ 1.905	90.38 $\pm$ 1.482			
	1953	40.82 $\pm$ 2.117	77.03 $\pm$ 1.849	... ..			
	Differences in Percentage of Children Having Caries-Free Permanent Upper Incisors						
	Inter-City			Inter-Year			
	Age Group	Year	Sarnia-Brantford	Brantford-Stratford	Years	Sarnia	Brantford	Stratford
9-11	1948	6.33 S	14.21 SS	1948-51	4.41 NS	11.60 SS	-0.14 NS
	1951	13.52 SS	2.47 NS	1951-53	- 6.61 S	1.71 NS	...
	1953	21.84 SS	...	1948-53	- 2.20 NS	13.31 SS	...
12-14	1948	2.25 NS	39.53 SS	1948-51	- 0.55 NS	13.24 SS	-5.31 S
	1951	16.04 SS	20.98 SS	1951-53	-12.54 SS	7.63 S	...
	1953	36.21 SS	...	1948-53	-13.09 SS	20.87 SS	...

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the reliability of the information to some degree. It is at least theoretically possible that a high deciduous caries rate in a community may lead to a higher extraction rate there, thus obliterating the evidence. Nevertheless, it is of interest to note that the index values for deciduous teeth (Tables 9 and 10) indicate the same general trends as between cities and surveys as were shown by the data for permanent teeth. In 1951 and 1953 deciduous teeth

in the 6-8 age group were considerably less carious in Brantford than in Sarnia. This, with the Brantford inter-year differences for that age group for the three successive surveys, suggests that primary teeth whose enamel calcification has been affected by fluoridated water since birth are considerably more caries-resistant than those in the fluoride-free control city. The benefit derived by the Brantford 9-11 year age group in the primary dentition is

TABLE 8

MEAN DMF (DECAYED, MISSING, FILLED) PERMANENT UPPER INCISORS PER CHILD

Age Group	Year	Mean DMF Permanent Upper Incisors Per Child and Standard Error of Mean					
		Sarnia	Brantford	Stratford			
9-11	1948	0.56 ± 0.048	0.34 ± 0.034	0.01 ± 0.007			
	1951	0.43 ± 0.041	0.11 ± 0.021	0.04 ± 0.011			
	1953	0.56 ± 0.043	0.05 ± 0.013	... ..			
12-14	1948	1.16 ± 0.066	1.05 ± 0.058	0.07 ± 0.020			
	1951	1.16 ± 0.065	0.64 ± 0.046	0.15 ± 0.025			
	1953	1.56 ± 0.067	0.53 ± 0.048	... ..			
Differences in Mean DMF Permanent Upper Incisors Per Child							
		Inter-City		Inter-Year			
Age Group	Year	Sarnia-Brantford	Brantford-Stratford	Years	Sarnia	Brantford	Stratford
9-11	1948	-0.22 SS	-0.33 SS	1948-51	-0.13 S	-0.23 SS	0.03 SS
	1951	-0.32 SS	-0.07 SS	1951-53	0.13 S	-0.06 S	...
	1953	-0.51 SS	...	1948-53	0.00 NS	-0.29 SS	...
12-14	1948	-0.11 NS	-0.98 SS	1948-51	0.00 NS	-0.41 SS	0.08 NS
	1951	-0.52 SS	-0.49 SS	1951-53	0.40 SS	-0.11 NS	...
	1953	-1.03 SS	...	1948-53	0.40 SS	-0.52 SS	...

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clearly less than that obtained by the 6-8 age group. In the former group much of the enamel had been completed, and probably some caries begun before the water was fluoridated.

Oral Hygiene

Table 11 shows an assessment of the oral hygiene in each of the three cities. It is considered that any claim to a reasonable degree of validity of these figures rests upon the fact that all the

examinations to date have been done by the same examiner. Classification and recording of oral hygiene was undertaken because it was considered that marked differences in oral hygiene as between the test and the control groups might conceivably affect the findings—or at least might be taken into consideration as a modifying factor, although not a strictly measurable one.

TABLE 9

PERCENTAGE OF CHILDREN HAVING CARIES-FREE DECIDUOUS TEETH

Age Group	Year	Percentage of Children Having Caries-Free Deciduous Teeth and Standard Error of Percentage					
		Sarnia	Brantford	Stratford			
6- 8	1948	10.16 ±1.170	12.28 ±1.320	35.65 ±2.131			
	1951	10.13 ±1.146	22.80 ±1.743	30.38 ±2.063			
	1953	9.42 ±1.027	21.67 ±1.797	... ..			
9-11	1948	33.63 ±1.977	34.96 ±1.956	40.97 ±2.366			
	1951	32.47 ±1.883	33.56 ±1.965	41.23 ±2.305			
	1953	37.39 ±1.864	40.33 ±2.095	... ..			
		Differences in Percentage of Children Having Caries-Free Deciduous Teeth					
Age Group		Inter-City		Inter-Year			
	Year	Sarnia-Brantford	Brantford-Stratford	Years	Sarnia	Brantford	Stratford
6- 8	1948	2.12 NS	23.36 SS	1948-51	-0.03 NS	10.52 SS	-5.26 NS
	1951	12.67 SS	7.58 S	1951-53	-0.71 NS	-1.13 NS	...
	1953	12.25 SS	...	1948-53	-0.74 NS	9.39 SS	...
9-11	1948	1.33 NS	6.01 S	1948-51	-1.16 NS	-0.40 NS	0.26 NS
	1951	1.09 NS	7.67 S	1951-53	4.92 NS	6.77 S	...
	1953	2.94 NS	...	1948-53	3.76 NS	5.37 NS	...

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Mottled Enamel

In a previous report (3) the appearance of a few cases of mild mottling, detectable only by an experienced observer, were described from our findings at Stratford, where the water contains 1.3 ppm. of fluoride. These were barely discernible whitish flecks and not unsightly. The newly erupted six-year molars observed in the 1953 survey in Brantford, the total enamel calcification of which had taken place

since the water was fluoridated there, showed in some cases this same mild type of mottling which can be detected only by an experienced examiner. But in Sarnia, where the fluoride content of the water is negligible, a few cases of mild mottling resembling very closely those seen in Stratford and Brantford were also observed and recorded. It is, therefore, clear that mottling does occur in communities where water-borne fluorides could not be the cause,

TABLE 10

MEAN df (decayed, filled) DECIDUOUS TEETH PER CHILD

Age Group	Year	Mean of Deciduous Teeth Per Child and Standard Error of Mean					
		Sarnia	Brantford	Stratford			
6- 8	1948	4.89±0.122	4.95 ±0.134	2.20±0.107			
	1951	4.89±0.119	3.58 ±0.126	2.62±0.115			
	1953	5.17±0.113	3.22 ±0.125	... ..			
9-11	1948	2.50±0.111	2.37±0.101	1.66±0.095			
	1951	2.41±0.101	2.25±0.098	1.76±0.094			
	1953	2.26±0.094	1.94±0.097	... ..			
Differences in Mean of Deciduous Teeth Per Child							
Age Group	Year	Inter-City		Inter-Year			
		Sarnia-Brantford	Brantford-Stratford	Years	Sarnia	Brantford	Stratford
6- 8	1948	0.06 NS	-2.75 SS	1948-51	0.00 NS	-1.37 SS	0.42 S
	1951	-1.31 SS	-0.96 SS	1951-53	0.28 NS	-0.36 S	...
	1953	-1.95 SS	...	1948-53	0.28 NS	-1.73 SS	...
9-11	1948	-0.13 NS	-0.71 SS	1948-51	-0.09 NS	-0.12 NS	0.10 NS
	1951	-0.16 NS	-0.49 SS	1951-53	-0.15 NS	-0.31 S	...
	1953	-0.32 S	...	1948-53	-0.24 NS	-0.43 SS	...

S Statistically significant at two standard error level;) See p.9 for
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Other Effects of Fluoridation

The Brantford health authorities report that no ill effects of any kind resulting from fluoridation have been detected there. A similar statement, without special reference to Brantford, was made in an official joint statement issued by the Canadian Dental Association and Canadian Medical Association in January 1953 (9).

SUMMARY

Comparison of the data obtained in Brantford in 1948, 1951, and 1953 shows a steadily continuing and significant reduction in the caries incidence in all the age groups studied at Brantford. The six year molars of the Brantford children born subsequent to the initiation of fluoridation there (June 1945) appear to show a resistance to caries comparable to that of the teeth of the children of the same age in Stratford

TABLE 11

PERCENTAGE DISTRIBUTION OF CHILDREN EXAMINED, ACCORDING
TO ORAL HYGIENE STATUS

City	Year	Good	Fair	Poor	Total Children Examined
Brantford	1948	34.3	30.6	35.1	100.0
Brantford	1951	34.2	32.8	33.0	100.0
Brantford	1953	38.7	36.4	24.9	100.0
Sarnia	1948	19.7	28.0	52.3	100.0
Sarnia	1951	19.2	36.3	44.5	100.0
Sarnia	1953	28.0	37.6	34.4	100.0
Stratford	1948	17.8	37.5	44.7	100.0
Stratford	1951	10.1	42.1	47.8	100.0

where the water has contained 1.3 ppm. of fluoride from a ground source (wells) since 1917. This is considered to be the most significant evidence obtained from this study to date.

It is intended to continue the study at Brantford and the two control cities, with a view to observing developments in relation to the rest of the permanent teeth of the children born in Brantford subsequent to June 1945. These teeth will erupt between now and 1957, with the exception of the third molars, which are not being considered in this work.

At this time no dental or medical facts are known here which contraindicate the fluoridation of a community water supply to a level similar to that in use at Brantford. However, it is suggested that communities now planning fluoridation might profitably recognize the possibilities of adding to the present knowledge on the subject. The adoption of uniform methods of carrying out dental surveys, along with sound statistical procedures, would make possible a comparison of findings between different communities and

thereby add much to the value of the evidence obtained, while at the same time providing health authorities with a reliable basis upon which to report dental health results of fluoridation. To assist in this matter the Dental Health Division and the Research Division have prepared a publication which may be had from the former on request (7).

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The Forum

SUGAR AND DENTAL CARIES

The Councils on Dental Health and Dental Therapeutics of the American Dental Association.

The Journal of the American Dental Association, October 1953.

A summary of the joint report of the Council on Dental Health and the Council on Dental Therapeutics of the A.D.A.

There are essential factors in the process of human caries (1) a caries susceptible individual, (2) the presence of acid-producing and acid tolerating micro-organisms in the oral cavity which are (3) capable of producing an optimum oral bacterial enzyme system for the prompt degradation of simple sugars to acids (4) the availability of orally fermentable carbohydrates and (5) bacterial plaques adherent to the surfaces of the enamel of teeth.

The decalcifying effect of sweetened

beverages and fruit juices have been examined in sufficient detail to warrant certain conclusions.

(a) Research has shown that some sweetened drinks and some natural fruit juices decalcify teeth because of their acidity.

(b) Decalcification has been observed when either are consumed in large amounts or at frequent intervals.

(c) Decalcification probably should not be significant unless such solutions are consumed in large amounts or at frequent intervals.

(d) Fruit juices provide some of the valuable food elements of human diets, while prepared soft drinks provide nothing but calories.

HYDRAULIC TURBINE CONTRA-ANGLE HANDPIECE

By ROBERT J. NELSEN, D.D.S., CARL E. PELANDER and JOHN W. KUMPULA, Washington, D.C.

The Journal of the American Dental Association, September 1953

A high rotary speed enhances the efficiency of instruments used for cutting teeth in operative procedures. The small diameters of the dental cutting tools make it necessary to turn the instruments at high rates of speed in order to obtain effective linear speeds for the removal of enamel. Some dentists have been reluctant to use high speeds in many operations in the mouth because of the hazard to the patient. This danger is due chiefly to the high inertia of the revolving instrument.

A new handpiece developed at the National Bureau of Standards in co-

operation with the American Dental Association has been developed. It is a contra-angle dental handpiece containing a small turbine which is propelled by a high speed stream of fluid in a closed system. Because of certain characteristics inherent in hydraulic systems, many of the objections to the use of high rotary speeds in cavity preparation can be eliminated with the use of this new instrument.

SUMMARY

1. The advantages of using increased rotary speeds in tooth-cutting procedures have long been recognized.

2. The operation hazards attendant on the use of high rotational speeds with conventional belt- and-gear-propelled cutting tools have been considerably reduced by the development of a hydraulic turbine contra-angle handpiece.

3. Rotational speed of 61,000 rpm with considerably higher cutting rate and lower cutting pressure than can be attained with conventional instrumentation is now possible.

4. The mechanical difficulties of excessive vibration and heating characteristic of the gear-type contra-angle handpieces have been eliminated by positioning the turbine in the head of the new

instrument. Therefore, no gears are required.

5. Milling cutters such as steel and carbide burs of current design do not function well in this hydraulic headpiece. Grinding tools such as silicon carbide and diamond points and disks used with the headpiece cut with exceptional efficiency.

6. Even though some adjustment in the dentist's operative procedure is necessary, the instrumentation is basically the same as his present methods. Therefore, the use of this equipment will require no special training.

SPACE MAINTENANCE

By HENRY M. WILBUR, D.D.S., M.S.

The Journal of the Missouri State Dental Association.

The judicious use of a simple appliance will prevent the later development of an orthodontic problem resulting from the drifting of adjacent teeth into the space created by the premature loss of a tooth.

The premature loss of a permanent tooth is defined as the loss of such a tooth at any age up to young adulthood. The premature loss of a primary tooth is defined as such loss suffered before the succeeding permanent tooth has erupted through its bony crypt.

Various areas have different relative importance from the standpoint of the placement of a space maintaining appliance. The primary incisor area is of relatively no importance except for aesthetic considerations. The primary cuspid area is very infrequently involved, and then quite frequently the problem is beyond the help of a space maintaining appliance. The primary first molar area is of importance in that the mesio-distal dimension of the primary first molar is practically the same as that of the succeeding bicuspid, although statistically closure of the space and resulting malocclusion of the bicuspid, occurs less frequently.

The primary second molar has relatively much greater leeway allowable in that the mesio-distal dimension of the primary second molar is somewhat larger than its succeeding bicuspid; however, statistically the incidence of closure space and resulting malocclusion of the second bicuspid is quite a bit higher. The loss of a primary second molar before the eruption of the permanent first molar is of immediate concern.

Ordinarily a band and loop type of space maintainer is indicated for single and unilateral spaces where extrusion of the tooth opposing the space is naturally stabilized.

An all-cast, functional space maintainer is indicated where two adjacent primary molars have been lost after the eruption of the permanent first molar, or where the primary second molar has been lost before the eruption of the permanent first molar.

A passive lingual orthodontic arch is the type of space maintainer indicated where a single tooth has been lost on each side of the arch.

A removable partial denture type of space maintainer is indicated for multiple bilateral premature loss.

Dr. A. J. Coughlan Elevated to the Presidency of The Canadian Dental Association

AT THE annual Canadian Dental Association Luncheon and Business Meeting on Monday, October 19th, Dr. A. J. Coughlan from St. John was elevated to the Presidency of the Canadian Dental Association. The installation ceremony was conducted by Dr. Harvey W. Reid, a Past-President of the Association. Dr. Reid's remarks were as follows:—

"Mr. President, Dr. Archambault, Distinguished Guests, Ladies and Gentlemen: Much of the strength of any organization lies in the calibre of men that are being trained to take over senior positions within that organization.

The Constitution and Bylaws of the Canadian Dental Association provide, and I think very wisely, that we shall have a new President each year.

It is now my privilege, and I deem it an honour to introduce him to you.

Alphonsus John Coughlan, affectionately known to us as "Al" was born in Saint John, New Brunswick. He attended St. Peter's School and Saint John High School, and graduated from Tufts Dental College, Boston, in January 1918, with the degree of M.D. He also holds a Bachelor of Arts degree from St. Joseph's University.

After most of two years in military services as a Lieutenant in World War I he started practice in Saint John in May 1920. He has practised very successfully there ever since.

He has been President of the Saint John Dental Society, the New Brunswick Dental Society, and he has been representative to the Canadian Dental Association Board of Governors since 1948.

He is a Fellow of the International College of Dentists and he is a Member of the Knights of Columbus.

Al, I congratulate you, and I am very happy to install you as President of the Canadian Dental Association.

I charge you with the responsibility of leading this great organization for the ensuing year.

These are trying days for the profession . . . your duties will be onerous. You will have many vexing decisions to make and you will have disappointments. But let me assure you that you will have wonderful and cheering support from every member of the profession right across Canada. May God direct your judgment and bless your efforts."

After receiving the Chain of Office, Dr. Coughlan expressed himself to the membership of the Association:—

"Mr. Chairman, Honoured Guests, Ladies and Gentlemen: May I be permitted to say a word of thanks to Dr. Harvey Reid, who on behalf of the Canadian Dental Association, has elevated me to this high office.

I think Harvey extended himself a bit in some of his remarks and I wondered if my wife might be a bit confused on hearing some of these things.

Not so long ago I heard the President of a national organization, similar to the C.D.A., make the statement that in his estimation the Presidency was not a vocation nor an avocation, but a dedication. I feel that the truth of that statement may be brought into truer focus for me in the course of the next twelve months.

It is with much pride that I received this honour, realizing as I do, that in honouring me you are paying tribute to the Province which I represent — New Brunswick.

And may I say that in the formation of this organization, some fifty years

past, New Brunswick men played an important role.

The progress of our organization has not been rapid but it has been sound. It has moved along, consolidating its position and broadening the scope of its activities. The year which lies ahead may not be unlike previous years, requiring work, service and sacrifice, so that our organization may progress, not only for the membership but for the well being of all Canadians.

I have every confidence in the future of this organization with its competent staff, directed by our very efficient

Secretary, Dr. Don Gullett, supported by committees and committee chairmen, whose sole aim is the advancement and betterment of the dental profession across Canada. I feel that I can rely on the experience, help and assistance of a man who has served you as President well during the past year . . . Dr. Gustave Ratté . . . and on the wise counsel of a man who has been closely identified with the dental profession for many years . . . our President-Elect, Dr. P. G. Anderson. With such a supporting cast, I am pleased and honoured to accept the Presidency. Thank you."

The Address of the President, Dr. Gustave Ratté

**To the Annual Meeting of The Canadian Dental Association,
Monday, October 19th, 1953**

I WISH to thank those responsible for this wonderful Convention and the splendid arrangements, and for the wonderful time we are having here in Montreal, and we appreciate the self-sacrifices made by the dentists and their wives from Montreal — and I should say from all over the province — for having made this Convention a success. We Canadian dentists are happy to come back to Montreal, the birthplace of our Canadian Dental Association.

We have come here for two purposes. The first one is the meeting of the Board of Governors—this reunion of all those who have been delegated to deal with the administration of your Association and to study the social and economic situation of our profession in this country. This part took place from Wednesday to Saturday of last week. The second — what we call the General Convention — is specially devoted to a review of the latest developments in the science of dentistry. It is concentrated into three or four days for the benefit of those attending. It is

very important that at least once a year, each dentist makes an inventory of his scientific knowledge in view of his obligation to the public to whom he must render the best services.

The members of the Board of Governors, the chairmen of committees, and those who have honoured us by their presence and contribution to the meeting, have studied religiously and constructively, the numerous and extensive reports on dental matters presented for our consideration.

It is my duty at this moment to give you a bird's eye view of what has been accomplished during the Board of Governors' meeting.

With this thought in mind, that our main duty is to give to the public the best dental services possible, we have studied our facilities for dental education. We are proud of the great progress made in the dental sciences in our five dental schools. The profession and the public must recognize the sacrifices of the personnel of the Universities, and that the Universities themselves are making in order to prepare

skilful, competent practitioners. It is by constant raising of the educational level that we will reach the rank of a true health profession.

Some attention should be brought to the fact that the dentist is not only an expert operator but also a member of society, that he must have ideals and a conscience. There is a tendency sometimes, for a member of the profession to take an attitude which reveals a great deal of materialism and he is inclined to practise an honourable profession according to his own preferences and aptitudes, and, to be more interested in the financial reward in a short space of time and with the minimum of effort.

True professional service is not a commercial contract between two persons. It is the intimate relationship between one mind and another. On one side the patient comes to the dentist because he is proud of his mouth and recognizes the necessity of dental treatment. He comes also because he is entirely confident of the scientific skill and integrity of the man of his choice and sure that he will receive the best service possible. On the other side, the dentist, by his personality, and the full knowledge of his field, his good manners and affability, should be able to create the necessary ambience to give confidence to his patient in order to accomplish all necessary treatments. The real professional relationship between the patient and the dentist is the individual agreement of mind between one who needs and wants the services and one who is willing and fully qualified to render the services.

It is the members of the profession, themselves, who are making good or bad public relations for their profession. Such agents are distributed all over the country. If we want to improve our standing with the public, we must attempt to improve ourselves. It is our responsibility to give more attention to the members of the profession. It should be the ambition of every dental society, and of every in-

dividual dentist, to possess the qualities necessary to give personality to our profession; a personality which each one would be pleased to have, and to have noticed by the public. The choice of our future dentists should be made with the greatest care. The prospective student will never reach a real professional standing if he does not have an education beyond the general levels, at the beginning.

It is the aim and desire of our Universities that the future members of our profession have the best possible cultural background before entering the dental course. It is very necessary that every dentist, every dental society, and every college unite in their efforts to encourage the best type of student to enter the dental course. A system to attract this type of student should be developed for the future if we are to maintain the high standards and prestige of the dental profession in Canada.

On the national level, our profession is ready to discharge its obligations to the public. Many things have been said—that the dentists want to be a closed corporation; that they do not want more dentists; that they do not want to participate in any measure that will improve the dental health of the public. No statements could be further from the truth. As proof I will give you the statement of the Canadian Dental Association approved at their Board of Governors' meeting, for the betterment of the dental health of our population.

"The Canadian Dental Association stands ready to cooperate in any feasible plan for the improvement of dental health in Canada. In making such statement it is pointed out that support to any plan will only be given when proven facilities and personnel are available to fulfil the terms of the stated plan. This Association will not willingly enter into a contract, the terms of which are impossible to carry out.

"Serious difficulties exist in expanding Canadian dental services. Person-

nel is inadequate and teaching facilities for the production of increased personnel are not available. The level of public appreciation of dental services requires elevation by intensive dental health education in order to insure the success of any future planning. Research in dentistry needs stimulus by financial support. Both health education and research are vital ingredients for the economic success of a plan and essential if improvement in oral health is to be secured.

"In view of these above stated conditions the Canadian Dental Association recommends an intensified program of prevention.

1. *Research*—Some hopeful signs have appeared on the horizon as a result of increased activity in the field of dental research. However, the potentialities of this field of endeavour have been scarcely explored. Enough research has been done in the last few years to indicate tremendous possibilities. Need exists for adequate support in this field.

2. *Dental Health Education*—The statement is sometimes made that people are now educated beyond their means to pay whereas the truth of the matter is if people were better educated less means would be required. Recently an administrator of the most extensive health plan in dentistry yet seen, said it is little use giving health services to people unless they possess a full appreciation of the service rendered. As far as dental service is concerned the economic loss in rendering services to those who have no appreciation is appalling. Provision for dental health education preceding the introduction and continuous with the operation of a plan, is essential if any measure of success is to be attained.

3. *Dental Care*—The measure of any health service is the amount of improvement in health. Prevention is the watch-word of modern health. Taking into consideration the number involved, the available personnel and the

known amount of existing disease this Association is of the firm opinion that the only possible approach to the dental problem is through the younger age groups of the population. Through concentration of effort in the rendering of dental services to this segment of the population, assisted by intensified research and adequate dental health education programs, we believe improved dental health can be attained."

The Board of Governors see very clearly the need for more dentists in Canada, and, more auxiliary personnel. The teaching facilities in dentistry are inadequate to provide enough dentists to meet the future demand of the public for dental services. The demand is not being met now, and, with the rapidly increasing population, will worsen before it can improve. We advocate the early establishment of new dental schools within the Universities, and we can also state that even if these schools were built now, it would be some six or eight years before their influence would be effective.

While the Association has actively made every endeavour to secure more teaching facilities, we feel that it would be necessary to take more aggressive action. In spite of the activities of our Association in this matter, and of the Provincial Dental Legal Bodies, the profession is being blamed for the present shortage. For the past decade, continuous effort has been made by the profession to secure the expansion of teaching facilities. If all the possible teaching facilities were physically possible tomorrow, we would not be able to attain, for 25 years, the 10,000 mark which seems at this moment the ideal number of dentists for this country. While money appears to be available for most everything, I do not see why 20 millions cannot be found to give the population of Canada the necessary dental personnel.

The fluoridation of communal water supplies and the effect of fluoride in

reducing tooth decay have been thoroughly studied by our Board of Governors. Convinced that this method of prevention can reduce considerably the attacks of tooth decay, without any ill effects discoverable by either the dental or medical professions, the Canadian Dental Association recommends to the people of Canada the fluoridation of communal water supplies and fully endorses this method of prevention.

Many things can be said of the activities of our Association for the benefit of the individual dentist. I do not see that it is necessary to review them here because they will be published in the *Transaction*. This is, however, just one point I would like to bring to your attention at this moment which pertains to the Pension Assurance Plan. After one year's operation of the C.D.A. Pension Assurance Plan, the Executive engaged a competent actuarial firm to investigate it. Confirmation is given in the report of this firm, to the fact that the premium rates are much lower than available elsewhere and that the benefits are more extensive. The Association is advised to cooperate as far as possible in bringing the benefits offered

to C.D.A. members. Information concerning this Plan can be obtained during this Convention from the Manager of the Plan who is registered in this Hotel.

In closing I want to pay a tribute of gratitude to the members of the Board of Governors, the chairmen of committees, and to our devoted Secretary, for their unselfish attention to the dental problems of this country. I feel very honoured to have been your President and I hope that all together we have been able to build up this year, for the future. As time goes by dentistry occupies a larger and more important part in the health professions. With this comes an increasing degree of responsibility and greater obligations. If we want to discharge our obligations to the public and to our profession, we must have clearer understanding of what is going on in, and outside, the dental world; otherwise we will automatically cancel all the work and efforts of our predecessors. Our right to self-government and our ability to survive and develop depends upon our ability to foresee the future and to face the facts.

Presentations made to Dr. M. H. Garvin and Dr. T. R. Marshall

Following many years of faithful service to the Journal of the Canadian Dental Association, Dr. M. H. Garvin as Editor, and Dr. T. R. Marshall as Assistant Editor, were honoured by the Board of Governors of the Canadian Dental Association on behalf of the dentists of Canada by the President and President-elect of the Association.

In his remarks to Dr. Garvin, Dr. Gustave Ratté, President of the Cana-

dian Dental Association, commented as follows:

THIS BOARD has been in unanimous agreement with the wishes expressed by the members of the Committee on Publications to have with us once more our former Editor and Assistant Editor, Dr. Harry Garvin and Dr. Tom Marshall.

Dr. Garvin, it is my particular privilege to express to you the feelings of the Members of this Board, but you can



Dr. Gustave Ratté, rt., extends appreciation to the retired Editor, Dr. M. H. Garvin, while making a presentation of a silver tray.

easily realize that my voice is tinged with melancholy at this moment which marks the inevitable cessation of our intense collaboration.

I have not the intention to report here what has been written so nicely on your priceless contribution to the Canadian Dental Journal, but let me tell you that we, present here, consider your services rendered to Canadian Dentistry beyond our capacity of expression with words.

To assist in the foundation of a dental journal, and to maintain its publication with an unquestionable dignity during at least eighteen years is an achievement that can be seldom realized. You have done that, Dr. Garvin, to the benefit of our profession. In so doing you have become also a personality among the dentists of Canada, and I should say of the world. Your

quantities of heart and mind were above the meanness of the common world. We considered you, and we consider you, an idealist purely, located at the head of our Journal.

Men like you are essential to the improvement of a profession which has a tendency sometimes towards materialism. By your alert pen, the perfect knowledge of your language and your highly cultured mind, you have created a remarkable reputation among Canadian dentists here and abroad.

The services you have rendered to the public, to the Society and to your profession cannot be praised enough. This, plus the dignity of your life, makes of you an outstanding person in our dental world and a remarkable example for the future generation.

At this moment we accept with re-

gret that we let you enjoy your old age which we hope will be long, peaceful and healthy. We cannot let you go without saying to you how we have appreciated your courage, your alertness, your perseverance, your devotion and your generosity in the service of our profession. It is with a profound emotion that I convey to you the expression of gratitude of all the Canadian dentists. From the bottom of my heart and from the bottom of our hearts, we say to you, "Merci beaucoup" . . . thank you very much.

As a token of our friendship and your consideration, please accept this silver plate. Every time you look at it you can say to yourself, "They still remember and they are still grateful."

Following this presentation which was accompanied by a standing applause from the Members in attendance, Dr. Garvin remarked as follows:

Mr. Chairman and Gentlemen: As your Chairman has said, for over eighteen years I had the honour of editing your Journal. I feel that now an era has passed and that you are passing into another era which will be much greater and much more brilliant achievement for your new Editor.

Unless I appear too serious, I am going for a moment to tell a story which I think is appropriate for a lighter vein.

Those remarks I would like to have framed because I am sure even my wife, much less my friends, wouldn't recognize me. I would like to have some proof.

There was a lady who was very fond of collecting phonograph records, and every time she heard a good one she went and bought it. She heard a record one day, entitled, "Ten Little Fingers and Ten Little Toes in Manhattan." She said, "I must have that."

She looked up the telephone book and got the wrong number. A gentleman answered the phone and she said, "Have you 'Ten Little Fingers and Ten Little Toes in Manhattan'?"

He said, "No, but I have a wife and fifteen kids in Tennessee."

She said, "Is that a record, Sir?"

He said, "It may not be a record but it's an awfully good average."

I felt I put my best in the Journal, as you know. I feel it has been a good average . . . it has been as good an average as it could possibly be with the time available, which was very limited.

I think it was John Ruskin who said that the highest reward for a man's work is not what he gets for it, but what he becomes by it.

That Journal has done far more for me than it has for any of you or any of those who have read the Journal.

I have tried faithfully, I believe, to be able to live comfortably with myself by passing on the torch of good Dentistry and also high living, to those who have read it. I have tried to be able to look in the mirror and be unafraid of what I have seen. At times I have run up against a stone wall. I have stepped aside and allowed God to carry on, and if I have failed, as I often did, it was because I didn't turn things over often enough.

I don't know of anything that is more wonderful or that I can be more grateful for than the appreciation of one's friends . . . appreciation of a man who worked with you shoulder to shoulder . . . the men who know you best. I am very grateful, I am very thankful, I am very humble. I thank you very much.

The President of the Association then called upon the President-elect, Dr. A. J. Coughlan of St. John to express the feelings of the Board of Governors and of the dentists of Canada to Dr. T. R. Marshall. Dr. Coughlan commented as follows:

Mr. Chairman, Board of Governors and Friends: In the course of the coming year I suppose I shall be called upon to perform many duties but I question if any will be more pleasant than that which has been asked of me this morning.



Photograph—David Blier

Dr. A. J. Coughlan, rt., making presentation to Dr. T. R. Marshall, retiring Assistant Editor.

This pleasant duty is to express, on behalf of the Members of the Canadian Dental Association, the thanks and gratitude to a man who has laboured long in the interests of our Journal.

One cannot but be impressed, or perhaps I might say, inspired, by a man who chooses to devote his time and energy and to give his talents for the intellectual uplift of his fellowmen.

Such is the type of man we are honouring today . . . one who by his generous devotion to our publication has helped to develop it to a degree and to the high rank which it holds at present.

This man is Thomas Robert Marshall,

D.D.S., F.A.C.D. . . . better known to most of you as "Tom". Dr. Marshall has been associated with the Journal since its inception in 1935. In 1942 he was appointed Associate Editor, a post he has held and ably filled until a year or more ago. It was with keen regret that we have learned that due to ill health he was unable to carry on the duties of Associate Editor, but it is our earnest hope that freed of writings and deadlines, he may once more be blessed with good health.

Dr. Marshall, we ask you, on behalf of the Members of the Canadian Dental Association, to accept this gift, this

memento of your devotion and many years of long service to the Journal, and may it ever be a reminder of the esteem and affection in which you are held by all of us.

Again with the members standing and to the accompaniment of applause, Dr. Marshall was presented with a silver service by Dr. Coughlan. Dr. Marshall then replied:

Mr. President-Elect, Monsieur Le President, Gentlemen of the Board of Governors, Ladies and Gentlemen—My Friends All: It is a bit difficult to express one's feelings on an occasion of this kind, but it is a very gracious thing you have done.

I have witnessed on many occasions, or on some occasions, where others have stood where I stand, and your heart sort of flowed in friendship and in good will and a feeling of "Well done! you deserve it all!" but somehow or other, you don't feel the same as you stand in the recipient's place.

I think perhaps you will understand when I tell you that my feelings and thoughts are a bit disorganized. But there are many things that one could speak of and I do want to mention one or two.

It is some seventeen or eighteen years that I have been privileged to assist in the work of the Journal. That privilege has given me a ringside seat, a reserved seat to all that has been going on in Dentistry, to get to know the great men of our profession and to get to know, shall I say, some of the brilliant hard-working individuals that are behind the front office. That is a great privilege, and being associated with the publication of our Journal has given me that privilege.

It has given me the privilege of the friendship of these men and it has broadened the horizon of Dentistry. It has raised the scope of your being an ordinary common dentist, if such there is.

Then again, I would like to take this opportunity of telling you that it has given me the privilege of being associated with a very great man, one of our leaders whom you have just seen fit to honour, in our recently retired Editor, Dr. Harry Garvin. There is much that I would like to say and that I will probably think of tomorrow and wish I had said. But in him has been a real gentleman, kind in his criticism and generous in his praise of efforts that have been very mediocre at times.

He is a man with a keen sense of aesthetics and integrity, and a high sense of duty . . . a man who is loyal to a cause, even to a fault. It has been a great privilege to be associated with him and I know that he has given us a foundation for the Journal that will record . . . he has made a contribution to Dental Journalism, not only well known in Canada but on this Continent . . . yes, in the world of Dentistry. I want him to know that I feel that has been my privilege, and a very great one, to have served with him over these years.

There is another thought that this occasion marks . . . that is, it is sort of the end of a road . . . some sort of a feeling that . . . well, that is it.

But these experiences, and there are many others that come to mind constantly, make you feel glad that you had this part, and they will live with you forever and a day. These friendships will continue and the scope of your vision must go on.

Then in addition to this you have seen fit to do this lovely thing. And to you, Sir, for all the kind words you have said . . . I think perhaps my wife should have shared this honour this morning because in many ways she has made it possible that I should make whatever contribution I have been able to make . . . may I say "Thank you" from the bottom of my heart for this very wonderful recognition.

ANNOUNCEMENTS

UNIVERSITY OF TORONTO, FACULTY OF DENTISTRY CONTINUATION COURSES FOR GRADUATES IN DENTISTRY

PERIODONTICS—January 18-22, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 14. Fee \$75.00.

OPERATIVE DENTISTRY—February 15-19, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 10. Fee \$75.00

ENDODONTICS—March 8-12, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 8. Fee \$75.00.

ORTHODONTICS (for the general practitioner)—April 5-9, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 10. Fee \$75.00.

PERIODONTICS—April 26-30, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 14. Fee \$75.00.

DENTAL ORAL SURGERY AND ANAESTHESIA—May 3-7, 1954. 9.00 a.m.—5.00 p.m. Enrolment limit 12. Fee \$75.00.

Please address inquiries to: The Dean, Faculty of Dentistry, University of Toronto, 230 College Street, Toronto 2-B, Ontario.

• A one-day Workshop on "OCCUPATIONAL ORAL-HEALTH IN GENERAL DENTISTRY AND PUBLIC HEALTH," sponsored by the First District Dental Society of New York with the collaboration of the Postgraduate Medical School, Institute of Industrial Medicine, New York University, will be held on Friday, January 22, 1954, at the Hotel Statler, New York City.

Members of the health professions are cordially invited to attend all sessions. Admission is free. For registration forms, write to Public Health Workshop, First District Dental Society, Hotel Statler, New York 1, N.Y.

• **THE DISTRICT OF COLUMBIA DENTAL SOCIETY** Twenty-second Annual Postgraduate Clinic will be held March 14 to 17, 1954, at the Shoreman Hotel, Washington, D.C. The clinicians on the programme will be Drs. Lester W. Burkett, Lewis Alexander Cohn, Irving R. Hardy, Lewis Fox, Gaylord J. James, and Daniel J. Holland.

• **SECOND ANNUAL ORAL ROENTGENOLOGY WORKSHOP**, July 17, 18 and 19, 1954, Seattle, Wash.

For further details, write: Dr. E. W. Gourley, Secretary, 1003 Cobb Bldg., Seattle 1, Wash.

• **TEMPLE UNIVERSITY, SCHOOL OF DENTISTRY**, announces courses as follows: February 1-5, 1954, Occluso-Rehabilitation, March 1-5, 1954, Workshop in Periodontal Pathology, April 14-16, 1954, Clinical Occlusion.

Applications can be made to: Dr. Louis Herman, Director of Postgraduate Studies, Temple University School of Dentistry, 3223 North Broad Street, Philadelphia 40, Pa.

• **THE ANNUAL CONVENTION OF THE BRITISH COLUMBIA DENTAL ASSOCIATION** will be held at Victoria on Friday and Saturday, March 19 and 20, with the Empress Hotel as convention headquarters.

• **THE DIVISION OF ORAL HYGIENE NORTH DAKOTA STATE DEPARTMENT OF HEALTH** in cooperation with North Dakota Cancer Society, Inc., the North Dakota State Dental Association, the Northwestern District Dental Society presents "An Oral Cancer Symposium", Saturday, November 21, 1953, Clarence Parker Hotel, Minot, North Dakota.

• **THE ASSOCIATION DES LICENCIES ET DENTISTES UNIVERSITAIRES DE BELGIQUE** has organized an International Congress commemorating the 25th anniversary of the founding of the Association to be held at the Casino de Knocke-Albert-Plage, May 26-31, 1954. For further information write to the President, 141 Avenue Carton de Wiart, Brussels, Belgium.

• **ANNUAL CONVENTION OF THE NATIONAL ASSOCIATION FOR SOMATO-PROSTHETICS AND REHABILITATION** is being held immediately prior to the Mid-Winter Meeting of the Chicago Dental Society at the Conrad Hilton Hotel, Chicago, February 3, 4, 5, 6, 1954. Inquiries may be addressed to A. C. Fonder, D.D.S., 217 Birkhead Dr., Sam Houston Village, No. 2, San Antonio, Texas.



Editor

Wesley J. Dunn, Toronto

Associate Editors

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Editorial

THE CONVENTION IN RETROSPECT

The second half-century of Canadian Dental Association conventions was begun in a most successful fashion in Montreal on October 18th to 21st. From the commencement of the Sunday Evening Musicale to the termination of the Group Clinic presentations on Wednesday afternoon, the meeting offered an abundance of educational enlightenment and relaxing diversion.

Music lovers were especially delighted with the offerings of the meticulously trained Montreal Men's Choir under the direction of Mr. Val Smiley. Seldom has it been such a pleasure to witness a performance by a choir with the awareness of its conductor that this one demonstrated. As a group, each responds to the slightest direction from the leader and that, combined with an awareness of selection appeal, makes an evening of listening to the choral offerings of this choir a most enjoyable experience. The assisting artists were also much appreciated.

Monday morning saw the continuance of registration which had begun the previous day, and at the final tabulation it was determined that 720 dentists had registered for this combined meeting. Before departing to their respective homes it was apparent that each conventioner felt himself adequately rewarded for his absence from his normal routine.

The presentation of Table Clinics was the main feature of the Monday morning session. Thirty-one dentists assiduously prepared material and presented information on almost all aspects of dental practice. The value of this informal type of presentation cannot be overestimated in appraising the worth of any convention programme. With a small expenditure of time it is possible to receive much information of a practical nature on a wide variety of subjects.

The C.D.A. Luncheon and Business Meeting was well attended and the agenda offered interesting features. The official welcome of the city of Montreal was given by an Alderman, Dr. Archambault, who expressed appreciation for the statement of the Board of Governors concerning the fluoridation of communal

water supplies. The good wishes of the American Dental Association were extended by its Secretary, Dr. Harold Hillenbrand, and then Professor G. E. M. Hallett tendered the greetings of the British Dental Association.

Two honorary life memberships were conferred upon outstanding dental educators, Dr. Arthur Walsh and Dr. Ernest Charron, by the president of the Association, Dr. Gustave Ratté.

Another event of national interest took place when the Dominion Dental Council turned over its books and records to the newly-formed National Dental Examining Board. This event was indeed history-making as provincial boundaries will no longer be a deterrent to those who have qualified at these national examinations.

The annual ceremony of the elevation of the president-elect of the Association to the highest office in the gift of Canadian dentistry was performed as Dr. A. J. Coughlan became the C.D.A. President.

Three major presentations were given in the afternoon when Dr. H. A. Baxter spoke upon 'A complete rehabilitation programme for cleft lip and palate cases' in which he gave in detail the activities of his department of plastic surgery and others associated with the care of these problems in the Royal Victoria Hospital in Montreal.

The Canadian Dental Association Pension Assurance Plan was discussed by the administrator, Mr. E. R. Williamson, and once again it was made most apparent that the dentists in Canada may avail themselves of an all-inclusive programme, the like of which is unobtainable elsewhere.

The third Grieve Memorial Lecture was given by Dr. G. Vernon Fisk, a dentist who upon graduation became associated with the late Dr. George Wellington Grieve, and in his own right has achieved a position of pre-eminence in his chosen field of orthodontics.

The evening which followed was set aside as a Hospitality night when classes, fraternities, and dental clubs held reunions and parties.

The essay programme continued on Tuesday morning when two main topics were under discussion: 'The diseases of stress' and 'Atomic energy in a dentistry programme'. The interest shown by the auditors was indicative of the success of the presentations.

The group clinicians were given their first opportunities to present their contributions to the didactic portion of the convention. Operative dentistry, Paedodontics, Prosthetics, Radiodontics, Periodontics and Endodontics were all main subjects of discussion by well-informed and capable clinicians. The broad experience and academic background of each made every presentation a worthwhile contribution to the over-all programme. These clinics were repeated on the final afternoon of the convention.

The fiftieth anniversary of the founding of the Faculty of Dentistry of the University of Montreal will long be remembered by those fortunate enough to be in attendance at the University and witness the outstanding programme prepared and presented by Dr. Ernest Charron and his Faculty staff. The time allotted was all too short to witness in its entirety this programme which included scientific contributions from every department of the school.

The Dinner and Dance held under the auspices of the College of Dental Surgeons of the Province of Quebec in honour of the C.D.A. president was indeed, as advertised, a gala affair. Dr. D. Prescott Mowry and Monsignor Georges Deniger, representing McGill University and the University of Montreal respectively, gave the principal addresses which were followed by words of appreciation from Dr. Ratté for the festivities held in his honour. An entertaining stage show and an enjoyable dance brought to a termination a most successful function.

The essay programme continued on Wednesday morning and the group clinics were repeated on the closing afternoon.

The Montreal Dental Club Luncheon was perhaps somewhat more informal than the previous one in that no addresses were given. The main item of business was the presentation of the Golf Tournament prizes.

Conventions such as this one are not prepared without an abundance of diligent toil. That such a successful one was achieved was due entirely to the conscientiousness with which the committee members accepted and discharged their responsibilities. The committee for the 1954 meeting is already hard at work, and should its efforts make an emulation of the achievements of this convention just completed, then the committee can feel with justifiable pride that it has performed its duties faithfully and well.

ROYAL CANADIAN DENTAL CORPS NEWS

The Director General of Dental Services attended the meeting of the Board of Governors of the Canadian Dental Association.

Colonels C. B. H. Climo and W. E. Meldrum attended the joint meeting of the Canadian Dental Association and Annual Montreal Fall Clinic.

Lieutenant-Colonel G. B. Shillington and Major E. C. Purdy were essayists at the Annual Montreal Fall Clinic. The former's subject was "Preservation of Supporting Tissues in Partial Denture Prosthesis"; the latter's presentation dealt with "Principles of Endodontia and Periapical Surgery".

Table clinics were given by Major G. C. Evans on "Hydrocolloid in Crown and Bridge" and Major H. W. Hart on "Intermaxillary Relations and Registrations in Complete Denture Prosthesis."

The essayists and clinicians are all

members of the instructional staff at the RCDC School, Ottawa.

The following personnel have returned to Canada from service with the 25th Canadian Field Dental Unit in the Far East: Majors W. W. Anglin, E. D. Fraser, A. R. Smith, W. R. Thompson, Captains A. G. Andrews, H. R. Kettyls and Adjutant-Quartermaster Captain J. W. Fletcher.

These officers have been replaced by: Majors S. G. Bagnall, A. R. Ramsay, Captains R. A. Gray, T. D. Joslin, H. E. McKenna, C. J. Sivell, K. M. Thompson.

The following personnel have proceeded on rotation to Germany to serve with the 27th Canadian Field Dental Unit: Majors D. H. Hillier, E. C. Purdy, J. W. Turner, Captains G. J. D. Belanger, P. H. Guevremont, J. W. Jolly, J. G. S. MacIntosh, S. W. Muller and Adjutant-Quartermaster Lt. E. Clarke.

The Sixth Annual Meeting of the **Royal Canadian Dental Corps Association** was held in Montreal, P.Q., on October 22nd and 23rd, 1953, under the chairmanship of Colonel Leonard E. Kent, President. Officers of the Association's National Executive, for the coming year are:

Past President—Colonel Leonard E. Kent, Lachine, P.Q.

President—Lt.-Col. M. M. McDougall, Vancouver, B.C.

President-elect—Lt.-Col. Hugh R. McLaren, Ottawa, Ont.

1st Vice-President — Major H. C. Thompson, Hamilton, Ont.

2nd Vice-President — Lt.-Col. T. J. Cooke, Winnipeg, Man.

Secretary-Treasurer — Lt.-Col. D. W. Henry, Montreal, P.Q.

The Royal Canadian Dental Corps Association, as a member-organization of the Conference of Defence Associations, is the officially-constituted advisory body to the Minister of National Defence, and to National Defence Headquarters, on matters pertaining to the organization, administration and training of the RCDC (Reserve Force). Membership in the Association is open to, in addition to Reserve Officers, all ex-Officers of the CADC, CDC, RCDC and to Canadian dentists holding a commission in any other Service. Details concerning membership may be obtained from Officers Commanding RCDC (Reserve Force) units, or from the Secretary-Treasurer, 1534 Crescent Ave., Montreal, P.Q.

CANADIAN DENTAL ASSOCIATION NEWS

FROM THE OFFICE OF THE SECRETARY

Annual Meeting

The Montreal Meeting will be remembered as one of real accomplishment. Decision was made to conduct an economic survey of dentistry. The C.D.A. Pension-Assurance Plan was re-affirmed. Constructive action was taken on the subject of fluoridation; the need for personnel; policy for future dental health services; and many other matters. The 1954 Annual Meeting will be held at St. Andrews-by-the-Sea, N.B., September 1-8.

Dr. A. J. Coughlan Installed as President C.D.A.

At the Association Annual Meeting held following the luncheon on Monday, October 19th at Montreal, Dr. A. J. Coughlan of St. John, N.B., was installed as President for 1953-54. Election of officers was held on the previous Saturday when Dr. P. G. Anderson of Toronto was elected President-elect and Doctors R. R. McIntyre of Calgary and A. G. Racey of Montreal were elected to the Executive.

C.D.A. Fully Endorses Fluoridation

The text of the resolution adopted respecting the fluoridation of communal water supplies follows:

"Whereas tooth decay, by affecting the vast majority of people in Canada has come to be recognized as one of the major public health problems of our time, and whereas many thousands of Canadians and millions of people elsewhere have consumed, during their total lifetimes, water fluoridated to approximately one part of fluoride to a million parts of water from underground deposits, and have thereby benefited by a reduction of about two-thirds in the attack rate of tooth decay without any ill-effects discoverable by either the dental or medical professions.

And whereas the effects of adjusting the fluoride content of communal water supplies to approximately one part per million have been studied extensively in their dental and medical aspects for more than eight years, revealing in every instance the same beneficial dental health results that have been known for over 20 years to accrue from consuming water fluoridated from underground deposits and with the same freedom from any systemic ill-effects.

Therefore be it resolved:

THAT the Canadian Dental Association recommends to the people of Canada that communities having a public water supply adopt a procedure for water fluoridation best suited to their local needs and for this purpose seek competent dental, medical and engineering advice."

17 October, 1953.

Policy Statement on Dental Health Services

The Health Insurance Studies Committee presented the following statement which was adopted:—

"The Canadian Dental Association stands ready to cooperate in any feasible plan for the improvement of dental health in Canada. In making such statement it is pointed out that support to any plan will only be given when proven facilities and personnel are available to fulfil the terms stated in the plan. This Association will not willingly enter into a contract the terms of which are impossible to carry out.

Serious difficulties exist in expanding Canadian dental services. Personnel is inadequate and teaching facilities for the production of increased personnel are not available. The level of public appreciation of dental services requires elevation by intensive dental health education in order to ensure the success of any future planning. Research in dentistry needs stimulus by financial support. Both health education and research are vital ingredients for the economic success of a plan and essential if improvement in oral health is to be secured.

The magnitude of the dental task is little realized by the average person. Oral diseases afflict almost 100 per cent of the people in one form or another. Recently it was authoritatively stated that 8.1 hours were required to re-habilitate the mouth of each individual taken into military service. Canada has approximately 5,000 dentists and over 14,000,000 people. The population has and is increasing rapidly. The number of dentists cannot increase to any appreciable extent unless teaching facilities are increased. Even if more training facilities were now available it would take some five or six years to secure an appreciable increase in practitioners.

In view of these above stated conditions the Canadian Dental Association recommends an intensified program of prevention.

1. *Research*—Some hopeful signs have appeared on the horizon as a result of increased activity in the field of dental research. However, the potentialities of this field of endeavour have been scarcely explored. Enough research has been done in the last few years to indicate tremendous possibilities. Need exists for adequate support in this field.

2. *Dental Health Education*—The statement is sometimes made that people are educated beyond their means to pay whereas the truth of the matter is if people were better educated less means would be required. Recently an administrator of the most extensive health plan in dentistry yet seen, said it is little use giving health services to people unless they possess a full appreciation of the service rendered. As far as dental service is concerned the economic loss in rendering services to those who have no appreciation is appalling. Provision for dental health education preceding the introduction and continuous with the operation of a plan, is essential if any measure of success is to be attained.

3. *Dental Care*—The measure of any health service is the amount of improvement in health. Prevention is the watch-word of modern health. Taking into consideration the number involved, the available personnel and the known amount of existing disease, this Association is of the firm opinion that the only possible approach to the dental problem is through the younger age groups of the population. Through concentration of effort in the rendering of dental services to this segment of the population, assisted by intensified research and adequate dental health education programs, we believe improved dental health can be attained.

C.D.A. Pension-Assurance Plan

Previous to the endorsement of the C.D.A. Pension-Assurance Plan the Executive determined to secure a report on the arrangement from a competent actuarial source. After one year of operation the Executive determined to secure a report from a recognized actuarial firm on both the plan and its operation to date. This report was received just previous to the Annual Meeting. After study the Executive summarized the findings as follows:

1. The C.D.A. Pension-Assurance Plan is highly commended in keeping with previous reports from other actuarial firms made at the request of the Executive.
2. The rates are stated to be lower for the same benefits than can be obtained elsewhere by individual dentists as far as can be found.
3. It is shown that the basic actuarial rates are the same as used in all other plans and the lower premium rates are the result of low administrative charges and no agency commissions. (2.6%).
4. The policies are stated to be free from danger clause.
5. No question arises respecting the security of the policies, each policy issued being

an individual contract is a distinct advantage to the individual.

6. The Association is advised to make certain of the retention of the plan because it is so advantageous for its members.
7. It is pointed out that the success of the plan depends upon the cooperation and support of the Association.
8. Certain recommendations are made in respect to the operation of the plan. These may be summarized in saying that the methods should be on a high ethical plane in keeping with professional action rather than attempting to copy ordinary methods of selling insurance.

In respect to this report the Board of Governors re-affirmed their support of the plan in the following resolution:

"Whereas the Report of the Wyatt Co. on the C.D.A. Pension Assurance Plan has confirmed earlier findings, and

Whereas this Plan has been favourably received by the members of the Association, and

Whereas the plan has been shown to possess real advantages for members, be it resolved

THAT the Executive give study to ways and means of cooperation in bringing the advantages to the members of the Association, provided that action taken be on a professional level."

Need for Increased Teaching Facilities in Dentistry

In view of future needs definite action was taken directed toward the establishment of expansion of dental schools. With a rapidly increasing population and too great a percentage of Canadian dentists over the age of fifty years a real need exists for expansion of existing dental schools and the establishment of new schools. The present teaching facilities for dentistry are more or less the same as existed when the population was two-thirds that of today. On this subject the following resolution was passed:

"Whereas a definite shortage of dental personnel exists in Canada, and

Whereas the present teaching facilities in Canada are inadequate to graduate adequate personnel to meet the demand of the public for dental services, and

Whereas the responsibility for the provision of increased teaching facilities in dentistry rests upon university and government authorities, therefore be it

Resolved that this Association use all available means to further the securing of expansion of teaching facilities for the training of dentists and dental hygienists in order to provide adequate dental service to meet the demand of the people."

Canadian Chamber of Commerce Opposes Compulsory Health Insurance

The following policy statement was approved by the 24th Annual Meeting of The Canadian Chamber of Commerce, Edmonton, September 14-17, 1953.

NATIONAL HEALTH AND HEALTH SERVICES

"The attainment of the highest possible standards of health is desirable. A healthy

people constitutes one of the most valuable resources of the Nation.

The problem of national health involves consideration of (1) prevention, (2) cure and rehabilitation, and (3) care of the chronically ill and incurable.

Most important is the prevention of disease and of accidents. This phase of the problem must be dealt with through an accelerated program of public education in health matters and in safety measures.

Adequate medical services and facilities must continue to be developed throughout Canada, and an increasing number of medical personnel trained, so that the Canadian people may be assured of proper medical care (which includes hospital care) when needed.

The national health does not depend upon health services alone, but also upon proper food and shelter. The existing social welfare program contributes in this latter respect, and in considering government outlays for health services, due regard must be had for the annual commitments which include Old Age Assistance, Old Age Security, and Family Allowances, all of which involve very substantial recurring costs paid for by the Canadian people.

"The Chamber believes that in a free society it is the responsibility of the individual to bear the cost of medical care for himself and his family. The Chamber endorses the action of many employers in assisting their employees in meeting the cost of medical care. The Chamber is impressed with the rapid development and growth of voluntary service and indemnity plans for prepaid medical care. These voluntary plans should be encouraged, with aid from employers when appropriate.

It is recognized that government aid is necessary in the development of adequate health facilities through Canada. The Chamber endorses the program of health service grants by Federal and Provincial Governments and believes that these grants should be as liberal as possible, bearing in mind that government revenues come from the people and that existing annual commitments for social welfare benefits already are substantial and are increasing. The Chamber believes that the contributions made by governments to assist private organizations in caring for the indigent sick are unrealistic and inadequate in some instances, and should be increased.

The Chamber is opposed to any form of compulsory health insurance or state medicine. So-called "free" health service would result in vastly increased demands upon them. Some of this increased demand would be to meet genuine need, but a good part of it would arise from persons demanding treatment as a right for imaginary ills or illness of no serious consequence which ordinarily do not require medical attention. It seems generally to be recognized that it is impossible to forecast with any accuracy the probable cost of a compulsory and comprehensive national health program, but it is inevitable that its cost would substantially exceed the amount spent today on health in Canada.

The Chamber believes that the continued growth of the various voluntary prepayment and insurance plans will soon result in the Canadian people being reasonably well covered against the costs of health services without sacrifice of individual responsibility. The only exception is in the case of the indigent. The Chamber believes that the high standard of care now provided will be extended in future to reach the whole of this group without the further development of health services on a voluntary basis, with government assistance."

C.D.A. Honorary Membership Conferred

Dean E. Charron of Montreal, Dr. A. L. Walsh of Montreal and Dr. H. Parker Buchanan, Secretary of the British Dental Association, were made honorary members of the Canadian Dental Association. In conferring these honours President Ratté spoke of the many years' service so freely given Canadian dentistry by both Doctors Walsh and Charron. He stated that the C.D.A. greatly appreciated the many courtesies made by the British Dental Association through the office of the Secretary, Dr. H. Parker Buchanan, and was pleased to confer honorary membership on him in absentia.

Additions to the Library

BEUBE, F. E.—Periodontology; diagnosis and treatment. 1953. 736 p. Illus.

BISSET, K.A.—The cytology and life-history of bacteria, 1950. 135 p. Illus.

FERGUSON, J.K.W., and LUCAS, G.H.W. Henderson's materia medica, 1951. 314 p.

FINN, H.R.B., LIDDLELOW, K.P., and GIMSON, A. P.—The photography of prosthetics. 1953. 502 p. Illus.

GIBSON, H. L. — The photography of patients including discussions of basic photographic and optical principles. 1952. 118 p. Illus.

HOGEBOOM, F. E.—Practical pedodontia or juvenile operative dentistry and public health dentistry. 1953. 642 p. Illus.

MONICA, W. S.—Woodie and the Jolly Dentist; battle the wicked Lactophilia. 1953. 20 p. Illus.

(THE) NATIONAL VITAMIN FOUNDATION, INC. — Recent advances in nutrition research, with emphasis on the newer B vitamins. Nutrition Symposium Series, Number 5, 1952. 129 p.

PEARSE, A. G. E. — Histochemistry, theoretical and applied. 1953. 530 p. Illus.

PERKINS, A. E.—Handbook of dental surgery and pathology. 1949. 430 p.

PINDBORG, J. J.—Gingivitis in military personnel with special reference to ulceromembranous gingivitis. Reprinted from Odontologisk Tidskrift. Vol. 60; 407-499, 1951. Illus.

ROUNDS, F. W. and ROUNDS, C. E. — Principles and techniques of exodontia, 1953. 407 p. Illus.

TAUBE, M.—Studies in coordinate indexing. 1953. 110 p.

NEWS FROM THE PROVINCES

QUEBEC

The Annual Fall Golf Meet of the **Montreal Dental Club** was held at the Rosemere Golf Club on Friday, September 25th. Perfect golfing weather greeted the twenty-seven golfers and would-be golfers who teed off. After the smoke of battle cleared, Roy Dohn copped low gross honors for the fourth consecutive time. Runner-up for low gross honors was Bob Harvey. Roger McMahon came home first in the net division followed by Earnie Ambrose.

At dinner which followed the golf, Dr. Frank Edward welcomed the club members as well as members of the other Dental Societies who attended including Dr. Antoine Raymond, President of La Société Dentaire de Montréal. Antoine, in response to the familiar chant of "speech" thanked the club for its invitation to the members of his club and expressed the hope that a good number of the Montreal Dental Club members would join "La Société" members in their annual meet at St. Lambert next year.

J. A. M.

A report on the World Conference In Endodontics was presented in both English and French to the September meeting of the **Montreal Endodontia Society** by Drs. W. J. Johnston and Vincent Tremblay. Some of the important points of the Conference reported are included below:

Dr. L. I. Grossman:— In discussing what teeth should be treated, Dr. Grossman suggested that easily accessible and non-septic teeth should be treated by the general practitioner whilst all others should be looked after by the specialist depending on his particular ability. He also stressed that where much resorption has occurred, it may be difficult to obtain results by conservative treatment alone.

Dr. George C. Hare:— In discussing aids to biomechanical instrumentation, this speaker stressed that sterilization is an essential part of the treatment. A healthy return to normal is realized when the tooth is comfortable, and the x-ray and cultures are negative; he mentioned that the x-ray might not always show a complete return to normal in that scar tissue may remain and show a fine line in the picture. It must always be remembered, however, that it is impossible for bone to heal in the presence of infection so that if healing is visible in the x-ray even though it may never be complete, it is still an indication that healing has taken place.

Dr. Ralph Sommer:— Discussing the use of antiseptics, etc., Dr. Sommer reported that Dr. Auerbach had proven that following mechanical debridement of the canal, 78% of all cases are sterile. Of the remainder, although P.B.S.C. Paste and similar antibiotics had their place, Paramonochlorophenol is still the drug of choice.

Dr. Francisco Pucci:— Dr. Pucci stressed that if pain is experienced for three hours or so following treatment of a non vital tooth, it is mechanical in nature; if, however, it persists beyond that time, it is due to irritation of some sort. With regard to filling materials, he suggested that gutta percha sealed with an absorbable paste is the material of choice.

Dr. Ralph Sommer:— In determining when surgery should be resorted to, Dr. Sommer confines it usually to the cases involving cysts; he stresses, however, that it is almost impossible to determine when a cyst is involved. He also resorts to surgery in 1. Apical Curvature; 2. Overfilling with pathosis; 3. Fracture of the apical third; 4. Where a post is present; 5. Where time is important; 6. Where root resorption is present; and 7. When broken instruments are found in the apical third.

Dr. Lester R. Cahn: In discussing repair following root canal therapy, Dr. Cahan stressed that we are relying on nature to heal tissues following our treatments. If, therefore, 1. the field is not sterile, 2. stress is present, 3. if there is endocrine dysfunction, 4. if the tooth is out of function, 5. if a cyst is developing, then there can be no repair. To obtain best results therefore, it is preferable to treat teeth in function.

R.A.H.

MANITOBA

The **Winnipeg Dental Society** opened its 1953-54 program of activities by having as its guest clinician Dr. Kenneth A. Easlick of the University of Michigan.

The morning session opened with the introduction of the speaker by Dr. Gordon Campbell. Dr. Easlick devoted the morning to an evaluation of the facts pertaining to the theory of Focal Infection. He demonstrated that in the light of present day knowledge the theory of elective localization as we have known it, has not been scientifically established. The role of the pulpless and infected tooth from the viewpoint of focal infection should be viewed with caution and discretion.

The afternoon session was devoted to a discussion of recent studies and advances in caries control measures and practical hints on the handling of a young patient in respect to the first dental appointment.

The large attendance of the membership was a tribute to the keen scientific mind of the clinician and his zeal in separating fact from wishful thinking.

Dr. Easlick was ably thanked on behalf of the Society by Dr. Orwell Brown.

Z.K.

ALBERTA

The first fall meeting of the **Edmonton and District Dental Society** was held in the MacDonald Hotel on October 6th. The main address of the evening was given by his Worship Mayor Hawrelak. He addressed the group on "Problems of Civic Administration".

Dr. J. C. Ward presented a report on the recent convention of the Western Canada Dental Society, and was thanked on behalf of the Society by Dr. Vic Lloyd for the splendid success of the gathering.

Dr. H. R. MacLean presented a report on the meeting held in Saskatoon to discuss the acute need of more dentists and facilities for training them.

Dr. Art Rooney gave his report on the latest developments of the efforts of the Alberta Dental Association in respect to a Dental Legal Protective Association.

Dr. William Orobko, President of the Society presided.

B.M.Mc.

BRITISH COLUMBIA

The active Public Relations Committee of the **B.C. Dental Association**, under its chairman, Dr. Don McDonald, recently presented a program to the Executive including these objectives:

1. That Dr. Leslie Robinson's articles on dental health which have been appearing in the Vancouver Province and the Victoria Times be repeated in the smaller local weeklies.

2. That speakers' panels be enlarged and publicized.

3. That education of the profession in public relations be stressed.

British Columbia, the third largest province in both area and population, has 566 dentists. It is safe to say that over half of this number attended dental society meetings in various centres during the last month.

The **Interior Dental Society** comprising dentists of the Okanagan district, which holds a convention at least once a year, met in Vernon on October 31st. Clinics presented were:

1. "Direct Acrylic Restorations" by Dr. Terry Parsons of New Westminster.

2. "Prosthetics" by Dr. Michael Pottinger of Vancouver.

The meeting of the **Fraser Valley Dental Society** was held in Abbotsford on October 8th with one of the society's own members as speaker. Dr. W. G. Newby, whose business-like approach to dentistry has always been admired, gave an excellent address on "Practice Management."

The **Victoria and District Dental Society** at its monthly meeting held on October 19th in the Empress Hotel, featured a panel discussion on "The Use of Antibiotics". Dr. Harold Turner acted as moderator, and the members of the panel were Dr. Donald Magee of the Pharmacology Department of the University of Washington School of Medicine, Dr. J. M. Sinclair and Dr. J. D. Stenstrom, internist and surgeon respectively of Victoria, and Dr. S. F. Miles, a member of the society.

At its November meeting the **Vancouver and District Dental Society** were addressed by Dr. Louis I. Grossman, professor of Oral Medicine at the University of Pennsylvania. An author of textbooks and a lecturer of international repute, Dr. Grossman spoke at a large afternoon gathering and again at the well-attended dinner meeting on the subject "Endodontia". He dealt with the matter of whether or not devitalized and pulpless teeth should be retained or removed under these headings:

1. Treatment of infected pulpless teeth by immediate root resection.

2. Conservative treatment of pulpless teeth with antibiotics.

3. The myth of focal infection from pulpless teeth.

At **Campbell River** on Vancouver Island all Grade I pupils have been treated under the School Board's new scheme for dental care, and Dr. Frank McCombie, Director of the Division of Preventive Dentistry, has advised the board to begin registering pre-school age children.

A teachers' convention held at **Prince George**, attended by 226 delegates from the north-central region of B.C., has urged the B.C. Teachers' Federation to press for a school of dentistry at the University of British Columbia.

D.H.M.



DR. GEORGE E. WERRY

*President of the Dental Alumni Association
of the University of Toronto*

ONTARIO

The first meeting of the **London Dental Society** was held on Wednesday, October 28th. The guest clinician on that occasion was Dr. Wilfred Clark of Hamilton, who presented a paper on "Complete Dental Prosthesis". He was introduced by Dr. R. G. Woods of Watford, and the thanks of the Society were tendered by Dr. A. M. Coote of London. The Executive for the London Dental Society is as follows:—

Dr. D. E. Cousins, President;
Dr. J. A. Guest, Vice-President;
Dr. R. J. Sutherland, Secretary;
Dr. A. J. Harris, Treasurer;
Dr. J. B. Taylor, Immediate past-president.

The members of the **Owen Sound Dental Society** takes some degree of pride in the fact that the school children of Owen Sound have one of the best dental health records in the province.

This is confirmed by the fall's examination of the 3,558 children now in the public schools and collegiate institute. The average number of cavities is 1.6 per child. The provincial average is well over 3.

A remarkable tally of 1,270 children had no defects at all. The two school dentists uncovered 6400 cavities.

The low average is a direct result of the school dental campaign which was started here in 1928, and has been achieved without the aid of a public health unit operating in the area.

This school campaign was pioneered by Dr. Wilson Bedell who carries the load of 11 years. Subsequently it has been looked after quite efficiently by Drs. William Tackaberry and Robert Sadler.

In the main, the campaign consists of bringing to light the presence of dental disease and urging its correction by the family dentist. It is thus a dental health program with the object of making the public dental health conscious.

H.W.B.

The officers of the **Grey-Bruce-Dufferin Dental Society** for the session 1953-54 were elected as follows:

Dr. D. A. Chestham—President;
Dr. H. W. Bedell—Secretary.

At the Annual meeting of the **Dental Alumni Association** of the University of Toronto held on October 16th, at the Royal York Hotel, a cheque for \$400.00 was presented to the Faculty of Dentistry. The presentation was made by Dr. W. W. Breslin and accepted on behalf of the Faculty by Dean Ellis.

There was a good attendance at this meeting, representatives being present from as far west as Winnipeg and as far east as Arnprior. Dr. J. E. Tilson and his committee provided fine food, good entertainment and dancing.

Dr. Geo. W. Werry of Oshawa was elected President for the 1953-54 term succeeding Dr. J. E. Tilson. The following officers were elected:

Hon. Pres., Dr. A. D. A. Mason, Thornhill; Pres., Dr. George W. Werry, Oshawa; Pres.-elect, Dr. R. C. Moore, Toronto; Imm. Past Pres., Dr. J. E. Tilson, Toronto; Vice Pres., Dr. H. Hutchison, Port Arthur; Dr. J. Gordon Chalmers, Toronto; Secretary, Dr. Ben Gross, Toronto; Treas., Dr. J. Crawford, Willowdale.

The annual dinner of the **Academy of Dentistry, Toronto**, was held in the Crystal Ballroom at the Royal York Hotel on October 19. President Dr. Elmer J. Henderson welcomed nearly 300 dentists to the inaugural meeting of the 1953-54 sessions, pointed out that the total membership now reached about 430, and drew attention to the forthcoming stated meetings as outlined in the Academy Year Book. He presented the Past Presi-

dent's insignia to J. Gordon Chalmers who, in his word of acceptance, challenged the younger dentists with the responsibilities of accepting leadership in their local societies when proffered. Dr. Mark G. Boyes, another Past President, presented Dr. Edward W. Paul with an honorary life-membership to the Academy. Dr. Paul, who has served dentistry for nearly half a century, graciously accepted the honour with a few well-chosen words.

The speaker of the evening was Fred-eric G. Gardiner, Chairman of the Metropolitan Council of Greater Toronto. His message gave an outline of the overall future development planning for Toronto. Certain services such as Water, Sewage, Transportation, Education, and Taxes required the management of one single administration, but others which were peculiar to the community involved, could remain unchanged and dealt with by each municipality. Such a plan was not an amalgamation of all the municipalities about Toronto, but allowed sufficient unity for expansion and development without hindrance. The Metropolitan Council was expressly set up to

provide this necessary leadership. The address was very enthusiastically received.

Reference was made to the forthcoming Winter Clinic at the Royal York Hotel and the meeting was then adjourned.

H.E.L.

The **Toronto Study Club of Dental Technicians** commenced its Fall activities with its annual Golf and Horseshoe Pitching Tournament. This Fall it was held at The Elms Golf & Country Club, Weston, Ontario. The day was cool but the contestants were kept warm by stiff competition.

After a most delicious dinner, the President, Cec. Watters, presented the awards.

The Charles Daly Trophy was presented to Gord. Wilson. Other awards for golf were presented to K. McKanday and Geoff. Tebbutt. After a hotly contested horseshoe tournament, Sam Sweet and Charles Goodall emerged the winners.

Guests at the dinner included representatives from all the dental dealers in Toronto.

L.A.R.

GENERAL NEWS

Dr. Leslie M. FitzGerald of Dubuque, Ia., has assumed the presidency of the A.D.A. following the close of the 94th Annual Session in Cleveland. He succeeded Dr. Otto W. Brandhorst of St. Louis. Dr. Daniel F. Lynch of Washington, D.C., was chosen as President-elect. The first Vice-President is Dr. Walter Pryor of Cleveland, and the second Vice-President is Dr. Charles A. Pankow of Buffalo.

Americans spent \$141,720,000 for dentifrices last year, an increase of \$30,340,000 or 27 per cent over 1950, according to **Drug Trade News**. The report, based on a survey conducted by the publication, showed a substantial increase in consumer expenditures for tooth brushes in the same three-year period. Tooth brushes accounted for \$44,310,000 of consumer dollars in 1952, an increase of \$6,540,000 or 17 per cent over 1950. Significantly, approximately 28 per cent of the expenditures for all tooth pastes in 1952 went for chlorophyll products. Sales of chlorophyll tooth pastes jumped from \$1,400,000 in 1951 to \$35,800,000 in 1952.

Dental Hygienists Awarded Health Grant Bursaries — Three young Nova Scotia women—Helen Atkinson, Truro, Leona Bradley, Princeport and Alice Petipas of East Tracadie, have been awarded bursaries through Federal Health Grants to assist them in their professional training as dental hygienists. This announcement has been made by the Hon. Harold Connolly, Minister of Health and Welfare for the province of Nova Scotia.

All three started two-year courses in September, Misses Atkinson and Bradley registering at Eastman Dental Dispensary, Rochester, New York, and Miss Petipas at the University of Toronto. On their graduation they will be employed with the Provincial Department of Public Health's Dental Division.

The American Academy of Pediatrics has adopted a resolution urging fluoridation "in order to reduce dental caries in the children of the nation." The action was taken at the annual meeting of the organization in Miami. The resolution pointed out that "no harmful effect of water containing one part in a million of the fluoride has ever been demonstrated."

The following resolution on fluoridation was approved by the General Assembly of the Federation Dentaire Nationale:

"At the annual meeting of the F.D.I. in Brussels in 1951 the Federation urged that all agencies interested in dental and general health should give most careful consideration to the promotion and use of fluorides in the control of dental caries.

The Federation at its meeting in Oslo, July 1953, affirms that there has been no evidence of any deleterious effect to general health by the addition of fluorides in appropriate amounts to drinking water."

The Board of Governors of the Canadian Dental Association approved the formation of a body to be called the Canadian Society of Oral Surgeons. Officers in the new organization are:—

President, Dr. Douglas Tanner; Pres. Elect., Dr. Joseph H. Johnson; Vice-Pres., Dr. W. W. Breslin; Sec.-Treas., Dr. John Methven; Exec. Members, Dr. Scott Hamilton, Dr. O. L. Croft.

Eight members of the 1st Divisional Dental Company which embarked for overseas in December 1939 were together for the luncheon of the Montreal Dental Club at the C.D.A. meeting in Montreal.

Those present were Drs. E. T. Bourke, G. Franklin, J. P. Lantier, L. F. McRae of Montreal, W. C. Dowell of Halifax, H. R. McLaren of Ottawa and F. S. Radway and C. L. Strachan of London. The members of this Company presented the Lt. Col. W. G. Trelford E.D. Trophy for Reserve Force competition at the O.D.A. Convention last May.

Presentation to Retiring Editors

During the session of the Board, honour was paid to Doctors Garvin and Marshall, who had served as Editors since the initiation of the Journal of the Canadian Dental Association. Both were presented with suitably engraved pieces of silverware. President Ratté made the presentation to Dr. Garvin and the incoming President Dr. Coughlan made the address of recognition to Dr. Marshall.

IN MEMORIAM

Charles Wilson Ellis — Dr. Charles Wilson Ellis passed away on October 17th, 1953, as a result of an automobile accident on the Queen Elizabeth Way, southern Ontario. Dr. Ellis was born in 1876 in Bradford, Ont. He received his early education there and graduated from the Royal College of Dental Surgeons of Ontario in 1900. He has practised in Bradford all his life.

Dr. Ellis was a member of the United Church of Canada, the Lions Club and the Masonic Order. He is survived by two daughters, Kathleen and Margaret.

Charles Ferguson Gillis — Dr. Charles Ferguson Gillis after a lengthy illness died at Campbellton, New Brunswick, on October 7th, 1953, aged 63.

Dr. Gillis graduated in 1915 from the Baltimore College of Dental Surgery, and enlisted in Armed Services in the first world war and attained the rank of Captain.

He took an active interest in musical circles and contributed much to the community.

Dr. Gillis practised in Campbellton for a number of years. His wife and a sister survive him.

DIRECTORY

Canadian Dental Association Headquarters—234 St. George Street, Toronto, Ontario. **Matters relating to the publication of manuscripts or news items** for the English Section of the Journal should be addressed to the Editor-in-Chief, Dr. Wesley J. Dunn, 234 St. George Street, Toronto, Ont.

Matters relating to the French Section of the Journal should be addressed to the French Editor, Dr. G. de Montigny, 400 est Blvd. St. Joseph, Montreal, P.Q.

Matters relating to the business of the Journal should be addressed to the Business Manager, Dr. Don W. Gullett, 234 St. George Street, Toronto, Ontario.

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All additions and changes of address should be sent to Dr. Gullett before the 20th of the month, to become effective the following month.

Matters relating to advertising should be addressed to the Advertising Representative, Mr. W. Edgar Read, Consolidated Press, 73 Richmond Street W., Toronto, Ontario.

Canadian Dental Association Pension Assurance Plan—P.O. Box No. 70, Brockville, Canada.

La prothèse complète l'est-elle vraiment sans ses malocclusions?

par YVES MORIN, B.A., D.D.S., Normandin, P.Qué.

La restauration de l'appareil masticateur chez l'homme a, depuis longtemps déjà, préoccupé l'esprit humain. Tout un lot de théories et de connaissances nous ont été léguées que l'évolution de la science s'est chargé de modifier profondément. Le problème des édentés s'est toujours montré d'importance primordiale. Après bien des recherches et bien des expériences, la prothèse complète est devenue aujourd'hui une science suffisamment dégagée d'incertitudes et de concepts erronés, pour se suffire à elle-même avec ses théories et ses problèmes. Néanmoins malgré le perfectionnement des techniques, le réajustement des théories, les progrès dans la recherche de matériaux neufs, on doute encore parfois vis-à-vis certains résultats obtenus dans la pratique restaurative. Les malocclusions seraient-elles conséquentes à une science faible ou à une science mal dirigée?

Avant d'aborder les différents aspects du problème des malocclusions, il conviendrait pour une meilleure compréhension, de se rappeler certaines connaissances anatomiques et physiologiques sur le mécanisme de l'appareil masticateur. Il nous sera sûrement plus aisé de saisir ensuite la relation existant entre la malocclusion, sa cause, ses effets et d'en établir ainsi plus exactement le processus.

De tout l'appareil masticateur, le milieu le plus souvent mis en cause en cas de malocclusion est sûrement l'articulation

temporo-mandibulaire⁽¹⁾. Il importe donc de très bien le connaître. "The dentist should be as informed of the anatomy, function and pathology of the temporo-mandibular joint as he is of the anatomy, function and pathology of the teeth and soft tissues of the mouth" ⁽²⁾.

L'articulation temporo-mandibulaire réunit le maxillaire inférieur à l'os temporal par diarthrose ⁽³⁾. Les surfaces articulaires du temporal et du condyle, partie terminale du maxillaire inférieur, ne sont donc mises en relation que par l'intermédiaire d'un disque fibro-cartilagineux, le ménisque, entouré de structures composantes, membranes synoviales, franges synoviales, ligaments. La surface articulaire de l'os temporal constitue les deux tiers antérieurs d'une dépression sise en avant et légèrement au-dessous du trou auditif: la cavité mandibulaire ou glénoïde. Celle-ci se trouve postérieure à l'éminence articulaire, élargissement de l'arche zygomatique et se divise en deux parties, antérieure et postérieure. Il est important de noter que la partie antérieure seulement est articulaire et tapissée de cartilage. La partie postérieure présente la fissure tympanique dans laquelle on trouve à la fois l'artère tympanique antérieure, et la corde tympanique émergeant du trou de Huguier⁽⁴⁾. Soulignons que cette partie postérieure de la fosse mandibulaire est susceptible de devenir région de trauma dans certaines malocclusions. Bon nombre

d'auteurs cependant prétendent que la corde tympanique et le nerf auriculo-temporal, à cause de leur protection osseuse adéquate ne saurait être traumatisés⁽⁵⁾. Recouvrant le cartilage de la partie antérieure de la cavité glénoïde, on trouve la membrane synoviale qui descend sur le bord postérieur du disque et se retrouve ensuite à la manière d'un coussin disposé entre la surface articulaire de la tête du condyle et la partie inférieure concave du ménisque. Ce dernier possède un bord supérieur convexe s'adaptant plus ou moins exactement aux parois de la fosse glénoïde. Par contre son bord inférieur concave reçoit la disposition convexe de la tête du condyle qui n'a pas de forme stricte-ment rigide. L'articulation temporo-mandibulaire formée par la liaison, à l'aide du ménisque, de la tête du condyle à l'os temporal, se trouve comme enveloppée dans des ligaments affectant la forme d'une capsule et liant à la fois le condyle au disque et à l'os temporal. Le ménisque et le condyle, en outre d'être retenus ainsi par les ligaments capsulaires, servent aussi de point d'ancrage aux tendons du muscle ptérygoïdien externe.

Le joint temporo-mandibulaire peut-être considéré parfois comme un tout avec des propriétés d'articulation strictes et possédant des mouvements bien définis. "On doit avoir bien à l'esprit qu'il y a deux joints bien distincts dans cette articulation, un entre le condyle et le ménisque, l'autre entre le ménisque et la fosse mandibulaire⁽⁶⁾. A cause de cette diarthrose "les mouvements de l'appareil masticateur seront donc nécessairement très complexes"⁽⁷⁾. Les muscles, les dents, les ligaments exercent sur elles une influence considérable. La conversation simple est un mouvement de la mandibule qui "regarde le plus bas des deux joints"⁽⁸⁾. Les mouvements plus prononcés de la mandibule provoquent une mise en opération des propriétés des deux joints à la fois. Alors que le mouvement propre du joint inférieur en est un de rotation simple, celui du haut constitue un glissement sur la paroi cartilagineuse de la cavité glénoïde, glisse-

ment contrôlé par les divers ligaments, muscles constituant les structures environnantes et se traduisant par des mouvements protusifs, latéraux, de fermeture, d'ouverture ou de combinaison variée.

Avec une telle complexité de mouvements et de structures, il est bien compréhensif que le moindre changement extérieur, pouvant avoir une influence quelconque sur la position statique normale du condyle ou encore dans son mode d'opérer, puisse provoquer des troubles du joint.

Outre les troubles du joint, dans les affections causées par les malocclusions, on rencontre aussi celles touchant les structures environnantes, tissus sous-jacents ou adjacents, muscles et parodonte.

Nous verrons une à une, chacune des malocclusions pouvant occasionner ces troubles et cela, selon un plan défini d'opérations toutes orientées en vue de l'obtention du meilleur résultat possible en restauration prothétique, l'occlusion normale idéale.

En restauration dentaire, l'occlusion normale idéale se traduit par l'obtention d'un maximum de points de contacts entre les surfaces articulaires des dents antagonistes, non seulement à l'état articulé, mais aussi dans le plus grand nombre de mouvements possibles⁽⁹⁾. Toujours en vue de cette fin, le restaurateur doit agir selon des principes déterminés et des fins bien précises — d'abord, rendre l'appareil masticateur le plus efficace possible dans le maintien de la santé générale, ensuite construire et adapter l'appareil de façon à protéger et à conserver les tissus adjacents, enfin relever l'apparence générale du patient⁽¹⁰⁾.

A la lumière de ces principes, l'opérateur pourra procéder dans son travail de restauration. Comme dans tout travail cependant, des erreurs techniques ou autres pourront se produire qui causeront certaines malocclusions et certains troubles.

Parmi ces erreurs, un grand nombre se rapporte à une mauvaise interprétation de la hauteur verticale ou position physiologique du repos. Cette position

du repos de la mandibule est constante et n'est altérée en aucune façon toute la vie durant⁽¹³⁾ même avec perte en tout ou en partie des dents naturelles⁽¹²⁾. Elle est déterminée selon une action réciproque et équilibrée des muscles⁽¹³⁾ qui demeure toujours la même. En effet tout muscle à l'état fonctionnel et en vertu de son tonus possède la propriété physiologique de retrouver sa position originale, s'il a été surtendu à un état anormal. Par contre, le muscle n'exerçant plus sa tension physiologique normale perd son tonus et perdant ainsi la propriété propre par laquelle il agit, pourra très difficilement retrouver sa position originale⁽¹⁴⁾. La position de repos, que j'appelle ici hauteur verticale, reste donc une position d'équilibre permanente déterminée par une action réciproque musculaire.

Comment l'interprétation de la hauteur verticale peut-elle apporter la malocclusion? L'opérateur peut, ou augmenter sensiblement la vraie dimension verticale du patient, ou encore la diminuer de la même façon. Dans les deux cas, on n'aura plus la position du repos, la position qui devrait être, celle déterminée pour chaque individu par son équilibre musculaire. On conçoit dès lors que par suite de cette erreur, la malocclusion viendra, cause d'affections et de troubles.

Le point temporo-mandibulaire, le premier, se ressent de ce changement forcé de son équilibre. En effet, la mandibule peut être dérangée de sa position de repos et se trouver ainsi en position d'"openbite" ou occlusion ouverte. Parfois sans troubler la position physiologique du repos, on peut aussi se méprendre sur celle-ci, soustraire un "free way space," pour en arriver finalement à une occlusion trop fermée. Dans les deux cas, l'équilibre musculaire sera lésé, on aura trouble dans la coordination des muscles⁽¹⁵⁾, troubles dont les effets se feront ressentir au joint surtout.

Prenons le cas d'une occlusion trop fermée. La position de repos reste la même. A la période finale du contact occlusal normal, le muscle ptérigoidien externe, muscle horizontal, devrait maintenir fermement contre le bord postérieur de l'eminence articulaire⁽¹⁶⁾, la tête du

condyle et le bord antérieur du ménisque, portions où il s'insère comme nous l'avons vu précédemment. Cette force appliquée par le ptérigoidien se trouve en même temps suivant l'équilibre musculaire du visage, contre-balancée par celle des muscles rétracteurs postérieurs. Dans l'occlusion trop fermée, le point de contact normal se trouvant dépassé, l'action du ptérigoidien se trouve annulée ou affaiblie, et l'équilibre se trouve ainsi rompu au bénéfice des muscles rétracteurs. On a alors dislocation de la partie inférieure de point⁽¹⁷⁾. Le condyle est forcé à l'arrière jusque sur le bord postérieur du ménisque, parfois le dépasse et va causer du trauma sur les tissus innervés et vascularisés reliant la capsule au ménisques. Divers troubles peuvent alors survenir, névralgies, bris de petits vaisseaux, déchirements des tissus délicats des synoviales. On pourra avoir presque à coup sûr résorption du disque avec inflammation, parfois douleur dans les tissus environnants. Le patient souvent, sans troubles locaux apparents, pourrait présenter des algies faciales qui déroutent même les médecins les plus avertis. A cause de la douleur irradiée, on croira à des névralgies du trijumeau, du glosso-pharyngien etc. "Des malades ont même subi des trépanations du sinus maxillaire montrant à peine une congestion de la muqueuse"⁽¹⁸⁾. On aura pensé à tout et on aura oublié l'articulation, siège d'une arthrite traumatique à l'état chronique ou aigu.

Quelques cas se sont présentés, où à cause d'une occlusion trop fermée, on a eu atteinte au nerf auriculo-temporal et par suite à la corde tympanique. En effet, à cause de l'empiètement du condyle en position rétrusive, différentes diminutions de l'espace buccal peuvent apporter une série d'irritations au nerf auriculo-temporal, et celles-ci peuvent devenir d'une telle amplitude que toute la région d'innervation peut en être touchée. "Quand la corde tympanique repose à l'extrémité mésiale de la fissure tympanique, celle-ci peut devenir sujette aux mêmes irritations dues aux rétrusions du condyle dans le plancher postérieur de la fosse glénoïde"⁽¹⁹⁾. Le tintement de l'oreille, selon

Block et Harris, serait la suite d'une compression par la tête du condyle, de l'artère tympanique interne sise au niveau de l'oreille moyenne dans la fissure pétro-tympanique ⁽²⁰⁾.

Ces troubles s'accompagnent parfois de craquements articulaires et de crépitements que le patient ressent très bien. Les craquements traduisent la poussée subite d'un muscle qui cherche à faire passer un obstacle et qui y réussit après une application de force non uniformément répartie, se dédant ensuite pour revenir à la normale. Ce mouvement explique la douleur qui parfois accompagne l'augmentation de la tension. Ces mouvements offrent souvent des variations spontanées ⁽²¹⁾ et s'entendant très bien à distance. Les crépitations, par contre, sont senties surtout par le patient mais peuvent l'être aussi de façon tactile. Elles se présentent exactement comme le bruit et la sensation d'un engrenage broyant en lui-même des substances étrangères, du gravier par exemple. Elles peuvent être très fines, elles peuvent être aussi rudes selon l'état et la poussée d'érosion des surfaces osseuses ou cartilagineuses en cause. L'occlusion trop fermée laisse donc encore là toute une série de troubles souvent non-douloureux, mais toujours apportant une pathogénèse des tissus quand elle n'existe pas déjà.

Dans l'occlusion trop fermée, l'esthétique aussi, s'en trouve affectée. Nous savons que l'orbiculaire est le muscle le plus superficiel entourant les lèvres, qu'il divise en deux moitiés distinctes: le demi-orbiculaire supérieur et le demi-orbiculaire inférieur. Avec la fermeture de l'occlusion normale, il y a affaissement de ce muscle péri-buccal et déséquilibre musculaire de ce côté. A cause des points d'insertion de l'appareil musculaire génio-hyoidien, apophyses géniées et os hyoïde, une traction sera exercée de la part de ce dernier, et cela au détriment des muscles régionaux dont nous avons parlé plus haut et qui présenteront de plus en plus une dystonie avec affaissement du bas du visage ⁽²²⁾. A la longue, on aura rides prématurées chez le patient avec altérations du facies. Le sujet, quoiqu'assez jeune parfois, pourra présenter l'aspect

d'un vieillard. Pourra apparaître aussi la perlèche ou la cheilose angulaire, maladie propre aux commissures des lèvres se caractérisant par les lésions fissurées de l'épiderme qui se fendille et se craquelle sans cesse. De plus, les lèvres sous l'action d'une pression inévitable et répétée exercée par les dents en contact réagissent en se durcissant et en s'épaississant. La mastication elle-même n'est pas ferme mais plutôt "machouillée", la langue remplissant souvent le rôle principal. Le bol alimentaire s'avale généralement dans un bruit caractéristique avec la sensation que le sujet avale en même temps de l'air.

Troubles articulaires, altérations du facies, épaissement des lèvres, perlèche, etc. . . . voilà de façon brève les conséquences multiples pouvant découler du port de pièces prothétiques donnant au patient une hauteur d'occlusion réduite qui n'est pas la sienne.

Pour l'opérateur, il est parfois assez difficile d'obtenir la hauteur d'occlusion de façon très exacte. Souvent, par suite d'une période non fonctionnelle, l'appareil buccal répond mal aux recherches. Il faut bien avouer qu'ici la prothèse complète ne possède pas de points de repère d'un catégorisme absolu. Diverses techniques ont été émises, enseignées même. Willis a imaginé son appareil mensurateur des distances pupille-nez-menton. Il ne peut être appliqué dans la grande majorité des cas, la structure des profils offrant de trop grandes variantes d'un individu à l'autre. Swenson met en valeur le masque transparent. Encore là, à cause des tissus mous et de leur facilité de compression, il est difficile de déterminer exactement la hauteur verticale et d'en déduire celle d'occlusion. On a parlé de données établies avant l'extraction, de radiographies de profils, etc. . . . La location et la mesure de la distance entre deux points de repère établis sur les maxillaires, demeure encore aujourd'hui un moyen assez précis de trouver la hauteur verticale. L'établissement d'un "free way space" en cas douteux et le contrôle peuvent rassurer d'avantage sur la position de repos. De toute façon, l'opérateur doit savoir juger avec un sens d'observation précis et une perspicacité

aiguës. Avec un peu de patience et le désir d'obtenir un travail convenable, le dentiste pourra trouver avec un minimum d'erreur la dimension cherchée.

Si l'occlusion trop fermée apporte ses troubles, l'occlusion trop ouverte ne le cède en rien sur ce point. On aura dans ce cas comme dans le précédent syndrome de la disfonction mandibulo-temporale. Le condyle dans l'occlusion ouverte sera en position de "Hinge" c'est-à-dire de rotation simple sur la surface articulaire du ménisque⁽²³⁾. Le plus souvent cependant, la tête du condyle selon sa marche habituelle et surtout s'il y a ouverture assez prononcée de l'occlusion, sera projetée en avant vers le sommet de l'éminence articulaire. Sous l'action de la tension musculaire, on aura à cet endroit une pression qui pourra devenir insupportable dans certains cas. Les complications, les troubles, les douleurs seront en ce cas à peu près de même nature que dans le cas précédent⁽²⁴⁾. Le condyle en faisant une pression anormale sur la région antérieure du joint pourra apporter la résorption du bord antérieur du ménisque souvent avec coïncidence entre l'éminence articulaire et la tête du condyle, du disque et des synoviales. Le condyle lui-même pourra s'éroder et causer des craquements articulaires localisés. Par suite d'une perte de balance dans l'équilibre musculaire, il pourra se produire une traumatisation avec dégénérescences et proliférations régionales, bref une arthrite qu'Harry Sicher, de Chicago, nomme déformante pour remplacer le terme syndrome de Costen donné par celui-ci⁽²⁵⁾ et que Sicher ne peut admettre. (Rencontre Sicher-Costen, Chicago 1949).

Dans la plupart des cas en occlusion trop ouverte, on aura douleur de la région articulaire, fatigue excessive des muscles dont l'équilibre est rompu et qui par suite du manque d'un "free way space" n'ont aucune période de repos. On définit le "free way space" comme l'intervalle existant normalement entre les dents du haut et celles du bas quand le mandibule est en position physiologique de repos⁽²⁶⁾. Le patient souffrant de cette malocclusion et présentant de la douleur au joint se sentira le besoin d'enlever ses

pièces pour se soulager. Par contre, ouvrir la bouche apportera chez les cas assez prononcés, une forte augmentation de la douleur locale avec radiation régionale souvent et algies faciales comme nous avons vu plus haut. On pourrait citer ici un cas rencontré en clinique à l'Université de Montréal. Souffrant d'une névralgie faciale insupportable et de céphalée très forte inexplicable, les médecins traitant en étaient venus à envisager sérieusement la possibilité d'une tumeur au cerveau. Après meulage des cuspidés sur une des deux pièces de prothèse portées, le patient possédant une hauteur verticale trop forte put s'en retourner chez lui sans complications subséquentes.

Nous avons démontré qu'un équilibre musculaire existait dans la physiologie de la face. Cet équilibre troublé par une occlusion trop fermée, peut l'être de même façon par une occlusion trop ouverte. Le muscle, de sa nature histologique, est un tissu vivant qui, lorsqu'il a atteint sa croissance maximum se trouve dans l'incapacité d'ajouter de nouvelles fibres à sa constitution⁽²⁷⁾ même sous l'action d'une force extérieure répétée. On trouve alors facilement l'explication de cette règle formulée par Helam Harris. "Les muscles surtendus retourneront à leur longueur originale même au dépens des autres tissus. Par contre les muscles raccourcis perdent leur tonicité et leur fonction normale"⁽²⁸⁾. Quand l'occlusion est trop ouverte, les crêtes osseuses, surtout celles du maxillaire inférieur, se résorbent⁽²⁹⁾ de façon à permettre à l'organisation musculaire environnante de reprendre l'équilibre perdu. C'est ainsi qu'avec le temps, les tissus sous-jacents très fermes et bien prononcés au début, se ramolliront et diminueront de façon déconcertante. La tension musculaire pourra en même temps, apporter chez le sujet, toute la gamme des troubles articulaires dont nous avons parlé précédemment avec conséquence sûre de la malocclusion en cours, une résorption alvéolaire plus prononcée au maxillaire inférieur avec diminution sensible de la stabilité de la pièce.

Du côté physionomie et aspect du visage cette tension musculaire se traduit

de façon assez remarquable. L'appareil génio-hyoidien, n'appliquant pas sa force physiologique normale, laquelle d'ordinaire annule celle des muscles connexes du visage, ces derniers sous l'effet de la malocclusion, remontent littéralement les tissus mous de la face et donne à celle-ci un aspect tendu et crispé⁽³⁰⁾. Les lèvres s'amincissent, les joues s'allongent, bref la physionomie n'est plus celle de l'individu à l'état normal de repos.

La mastication et la phonation elle-même s'en ressentent. En effet les muscles buccaux étant déjà tendus, il est difficile d'exercer des tensions plus fortes de façon à ramener les aliments sur les plans articulaires des dents. De la même façon la formation du bol alimentaire et la déglutition s'en trouvent influencées. Nous savons que le premier se fait sous l'action réciproque de la langue et des joues pressant les aliments sur la voûte palatine. Dans un deuxième temps, toute une synergie musculaire⁽³¹⁾ fait avancer le pharynx qui vient pour ainsi dire au-devant des aliments. Il est bien sûr que cette structure musculaire, influencée déjà par l'ouverture exagérée de la bouche, ne puisse se plier avec autant de facilité à l'exercice normal de la déglutition. L'articulation des paroles en sera plus difficile aussi à cause de l'agrandissement en hauteur et du rétrécissement en largeur de l'espace buccal.

Quoi qu'il n'existe pas de moyens absolument infaillibles d'enregistrer exactement la hauteur verticale,⁽³²⁾ les troubles peuvent être évités par l'opérateur. Nous avons déjà mentionné diverses techniques employées à cet usage. Pour obtenir la hauteur d'occlusion, il nous suffit de soustraire l'espace physiologique de repos dit "free way space". Cet espace doit exister quand le sujet est à la position physiologique du repos. Normalement il correspond à deux ou trois millimètres⁽³³⁾. Cependant dans certains cas, il arrive assez souvent que la hauteur d'occlusion ait été diminuée de façon légère ou marquée. Comme cette perte de dimension se fait par étapes successives, le joint temporo-mandibulaire s'ajuste concurremment pour adopter la position nouvelle. Il est donc assez difficile parfois de

refaire l'inverse du chemin parcouru; le tout doit se faire en effet de la même façon par tapes successives et échelonnées sur de longues périodes afin d'éviter du traumatisme articulaire. Avant de clore ce chapitre, il est bon de noter avec Ackerman: "Une dimension verticale normale assure, avec une position normale des condyles dans la cavité glénoïde, un profil facial normal, une tonicité tissulaire normale, alors que la réduction prématurée précoce ou intense de la dimension verticale modifie la position des condyles et des ménisques, altère le profil du patient, crée des rides et des fossettes, donne l'apparence de la vieillesse"⁽³⁴⁾.

Jusqu'ici nous avons vu les malocclusions en rapport avec les dimensions d'occlusion et de repos. Nous aborderons maintenant celles pouvant se produire par suite d'une mauvaise interprétation dans l'enregistrement de l'occlusion centrée ou centrique.

Avant de discuter une à une les malocclusions de ce genre, il importe d'avoir des idées bien déterminées et d'établir un rapport aussi précis que possible entre les termes que l'on pourra employer au cours de la discussion et qui comportent entre eux certains éléments de relation intime tout en étant, un envers l'autre, de signification complètement différente. Il en est ainsi des termes relation centrique et occlusion centrique.

Qu'est-ce que la relation centrique? Nous la définirons selon la définition même de la "National Society of Dentures Prosthetists", société dentaire américaine: "The mandible is in centric relation when the heads of the condyles are in the most retruded position from which the jaw can make free lateral movements"⁽³⁵⁾. Cette définition implique donc une relation seulement et non pas une position comme dans l'occlusion centrique. La mandibule pourra être à l'état physiologique de repos et l'on pourra avoir relation centrique. Comme nous le verrons plus loin, il ne peut en être ainsi de l'occlusion centrée qui est une position fonctionnelle. Cependant, cette relation centrique "se modifie conséquemment avec l'âge et la fonction et influence ipso-facto la position condylienne, tout

comme l'occlusion centrée se modifie avec les métamorphoses tissulaires dentaires parodontiques⁽³⁶⁾. A l'état normal elle se trouve donc, non pas dans la position la plus reculée des condyles dans la fosse glénoïde, mais bien dans celle la plus reculée à partir de laquelle on peut entreprendre des mouvements latéraux. "Centric relation is the terminal hinge position of the mandible from which the Bennet movements may take place"⁽³⁷⁾. La position "hinge" est déterminé par la position de la mandibule en rapport avec un centre axial qui traverserait la tête du condyle et sur lequel les dents se rencontreraient à chaque position de contact. Le mouvement Bennet est un mouvement diagonal effectué par la mandibule lors du mouvement de diduction⁽³⁸⁾.

L'occlusion centrique est plus qu'une relation. C'est une position de fonction statique ou dynamique, se traduisant par l'état d'opposition des plans articulaires des dents quand celles-ci sont en position de contact⁽³⁹⁾.

Il y a donc là, entre ces deux définitions, une différence primordiale qu'il est important de noter, à savoir l'opposition ou non des plans articulaires des surfaces des dents et la caractéristique fonctionnel ou non des deux. On nomme excentriques tous les autres mouvements de la mandibule à un degré quelconque de déplacement, c'est-à-dire en dehors de l'occlusion centrique que nous venons de décrire⁽⁴⁰⁾.

On peut trouver bon nombre de malocclusions par mauvaise interprétation d'une occlusion centrique. Ceci pourra se traduire de façon fort caractéristique. On pourra constater, après mise en bouche des pièces, que le patient au lieu d'enregistrer une occlusion centrique, s'est comporté de façon excentrique en forçant légèrement la mandibule en avant ou encore de côté. On pourra avoir aussi un manque d'équilibre dans la relation fonctionnelle des deux pièces avec mastication unilatérale. Ce sont là les deux malocclusions directement impliquées dans un défaut de l'occlusion centrique.

Dans le premier cas, il est bien évident que des troubles articulaires suivront. Le pterigoidien externe est un muscle à action horizontale, le muscle de la protu-

sion et de la latéralité. L'enregistrement peut se faire avec une contraction de même force bilatéralement, ce sera le simple mouvement de protusion. Par contre, la traction ayant différé, on pourra obtenir un léger mouvement de latéralité, qui lui aussi sera excentrique. Les troubles consécutifs au mouvement protusil mal à point pourront être multiples⁽⁴¹⁾: articulaires, musculaires, esthétiques, fonctionnels ou tissulaires. Au niveau du joint temporo-mandibulaire, le pterigoidien, à cause de ses insertions à la fois sur le condyle et sur le ménisque et par suite de cette traction continuelle, aura tendance à ramener en avant le joint inférieur et à provoquer ainsi au niveau de l'éminence articulaire de la résorption osseuse, de la fatigue musculaire, de la douleur et des gonflements locaux. L'éminence articulaire pourra se résorber en partie et en certains cas presque en entier. On aura à la longue chez ce sujet des mouvements protusifs exagérés facilités par la disparition partielle de l'éminence. La résorption méniscale s'observe aussi généralement. On a parfois blocage partiel de l'articulé avec souvent craquements et crépitations. Dans l'occlusion mal centrée et en latéralité, un joint pourra rester intact d'un côté et se trouver affecté de l'autre. Après certain temps, le joint affecté s'adaptera à cette situation nouvelle et, dès lors, il ne sera guère facile de corriger l'assymétrie faciale qui en sera résultée. On pourra avoir un patient qui en plus de présenter, d'un côté, les mêmes troubles que ceux énumérés plus haut, aura une déviation asymétrique de la mandibule que le déséquilibre musculaire laissera paraître d'une façon encore plus visible.

De même façon, l'équilibre musculaire de la face sera troublé. La mandibule tombant en centrique aura tendance sous l'effet des forces appliquées, à glisser légèrement en avant pour donner au patient une pseudo-prognathie, une "bite" d'habitude, comme prônent certains auteurs⁽⁴²⁾. On aura un menton long, des génio-hyoïdiens tendus avec une lèvre inférieure tendant à déborder la lèvre supérieure; la physionomie du sujet en sera toute changée.

L'occlusion centrée faussée par un mouvement de protusion peut aussi apporter de nombreux troubles du côté de la mise en équilibre de l'articulé. L'enregistrement de la position du mandibule à l'état d'occlusion est altéré par cette course protusive. En effet, on ouvre l'angle normal que font entre eux les deux maxillaires, en enregistrant celui-ci en position antérieure à celle de la hauteur d'occlusion normale. On comprendra pourquoi les contacts dans cette position excentrique seront modifiés. A cause de l'ouverture de l'angle, l'occlusion se fera donc prématurément sur les surfaces articulaires distales des prémolaires du bas avec contact possible sur la face linguale des antérieures. Après glissement, on aura occlusion forte sur les antérieures, mais nulle sur les postérieures.

Les pièces seront sujettes à l'instabilité par suite de cette mauvaise direction des forces masticatrices, verticales d'abord, se traduisant ensuite obliquement⁽⁴³⁾. Cette instabilité apportera vite un ramollissement des tissus (surtout ceux de la région inférieure), avec hyperplasie de ceux-ci. Cet état, un jour ou l'autre, commandera l'action chirurgicale pour l'obtention d'une prothèse meilleure et mieux équilibrée... Des phénomènes à peu près identiques se produisent dans les cas d'occlusion excentrique de latéralité supposée centrée. Les contacts peuvent se faire ici de façon bien répartie antéro-postérieurement, cependant le patient, pour obtenir une position de contact bien articulée, doit effectuer lui-même un mouvement de latéralité, c'est-à-dire appliquer une force de direction horizontale, dont le résultante de même direction et de même sens, tend à faire déloger la pièce, et à causer de la même façon que dans le cas précédent, de l'hyperplasie tissulaire inflammatoire ou dans les cas moindres, des irritations locales avec lésions concurrentes.

Il arrive aussi parfois qu'après confection des pièces et mise en bouche de celles-ci on obtienne des contacts sur un seul côté. Ceci peut aussi se produire comme conséquence du port de vieilles pièces mal équilibrées où on a eu hyperplasie et résorption. Le joint temporo-

mandibulaire ici comme ailleurs s'en trouve le premier affecté. Les forces de mastication ne se distribuent dans ce cas-ci que d'un seul côté—les forces en effet, se produisent en autant qu'elles rencontrent de la résistance. Or l'absence de contacts d'un côté provoque un déséquilibre majeur dans la répartition des forces masticatrices. Pour atteindre les contacts manquant, les muscles masticateurs du côté sans contacts, travaillent de beaucoup plus intensément que ceux de l'autre côté. Il y a déséquilibre. Les deux joints temporo-mandibulaires ne seront donc pas dans la même situation fonctionnelle. Le condyle du côté balançant sera à la longue projeté en avant. On aura résorption parfois assez avancée de l'éminence articulaire de ce côté⁽⁴⁴⁾. Gysi, après une série d'expériences, a démontré que la tête du condyle du côté balançant peut en certains cas être déformée, même tordue. Après cette période, le condyle présentera tous les signes d'une arthrite traumatique pouvant dégénérer à l'état aigu, et s'accompagnant d'inflammation, de douleurs localisées ou irradiées, bref de tous les troubles dont nous avons parlé plus haut. . . . Les craquements articulaires seront mieux perçus à cause du glissement du condyle sur le bord antérieur du ménisque.

Du côté musculaire, on aura, dans certains cas, asymétrie légère du visage, les muscles du côté en contact travaillant ferme, ceux du côté opposé auront tendance à devenir hypotoniques. A la longue, la mandibule pourra être déportée du côté sain et faire ainsi sortir le condyle de sa position normale d'articulation.

Ce mauvais équilibre dans la relation des deux pièces provoquera, comme dans le cas précédent, une distribution inadéquate des forces, qui apportera l'instabilité des pièces avec irritation locale et hyperplasie tissulaire, ces troubles se produisant toujours du côté opposé à celui où on a des contacts. Le tissu, par suite du phénomène d'adaptation naturelle existant dans l'organisme, réagira devant cette nouvelle condition, se ramollira, s'hyperplasia, parfois même, les lésions acquises pourront devenir avec le temps

et l'habitude des lésions précancéreuses.

Nous avons vu précédemment la majorité des malocclusions en cause vis-à-vis les restaurations prothétiques défectueuses. Jusqu'ici nous avons parlé de celles où nous avions mauvaises relations entre les pièces. Certaines malocclusions peuvent cependant se produire aussi, alors que nous avons malpositions des dents. Ces malpositions des dents déterminent souvent des interférences dans les mouvements mandibulaires. Sous l'impulsion de mouvements latéraux, protusifs, de diduction, on aura mauvaise application des forces et tendance à déloger les pièces⁽⁴⁵⁾. Les tissus se comporteront toujours de la même façon vis-à-vis cette situation. Les lésions et les troubles apparaîtront toujours du côté opposé à l'interférence. En pratique, ils seront à peu près les mêmes que ceux que nous avons décrits dans le paragraphe précédent. Avec une bonne technique de mise en équilibre, il est cependant relativement assez facile d'éliminer les interférences. Avec l'aide du papier carbone, le meulage sur l'articulateur des plans articulaires intercepteurs avec pierre montée ou encore pâte abrasive constitue encore aujourd'hui la méthode la mieux reconnue⁽⁴⁶⁾.

La prise de l'occlusion centrique est donc elle aussi une opération où le dentiste doit être très vigilant et posséder une bonne technique. Certains opérateurs se servent dans cette opération, du "pin trace" intra ou extra-oral. La plupart cependant emploient des boudins de cire montés sur base et prétendent que c'est la meilleure. Malgré tous les soins et toutes les attentions, des cas de malocclusion pourront encore se présenter qui devront être corrigés. Et même après confections des pièces neuves, il est encore possible que l'on obtienne des malocclusions pouvant être responsable: de l'occlusion fautive. Les "base plates" employées peuvent être instables, ou encore utilisées avec interférences entre celles-ci et le modèle. La cire usée peut être chauffée non uniformément, se trouver ainsi plus rigide d'un côté. On peut avoir aussi un articulateur faussé, faire des fautes dans la manipulation de celui-

ci ou encore dans le montage des modèles. Des dérangements peuvent se produire même dans la mise en "mouffles"⁽⁴⁷⁾. Toutes ces erreurs sont possibles et c'est là la raison pour laquelle le dentiste doit, dans la prise de l'occlusion centrée plus qu'ailleurs, être extrêmement soigneux, savoir, contrôler de façon à peu près certaine, si le patient répond bien à l'enregistrement des données.

Après toute cette énumération de malocclusions et de troubles consécutifs au port de pièces de prothèse défectueuses, on peut se demander si réellement l'art de la restauration prothétique est complet sans ces faillites. La science dentaire est une science jeune qui s'est développé très vite. Ce progrès est dû en grande partie à cette compréhension récente du dentiste, que la santé, le confort, et le bien-être général du patient dépendent en grande partie de ses connaissances de l'anatomie orale, de la physiologie, de la psychologie, et des sciences mécaniques⁽⁴⁸⁾. L'opérateur comprend mieux que le tissu sur lequel il travaille est un tissu vivant qui change tous les jours et dont le comportement se trouve en relation étroite avec celui de l'individu. A cause de cette notion, il est évident qu'on ne saurait attendre d'une pièce de prothèse le même comportement que celui d'une restauration bâtie sur un milieu statique et non soumis aux influences extrinsèques. La science prothétique restaurative grâce à son évolution acquise surtout ces dernières vingt années possède maintenant des principes et des concepts bien précis. Elle aura toujours pour but la restauration de l'appareil masticateur, en vue des facteurs fonction, confort et esthétique du patient. Cependant comme toute science, dont le champ d'action repose sur un milieu changeant, et dont les opérateurs sont des humains, quoique possédant des données précises, la restauration prothétique ne sera jamais complète sans ses malocclusions. Mais encore là le dentiste seul, en considérant le travail fait, pourra dire, si la faute ou si la malocclusion en cause implique la science ou l'opérateur.

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Nouvelles de l'Association

Réunion annuelle

La réunion de Montréal a accompli une bonne besogne. On a décidé de mener une enquête sur l'aspect économique de la profession. Le plan d'assurance-pension de l'A.D.C. a été examiné et approuvé de nouveau. Au sujet de la fluoruration, on a affirmé la position de l'Association; on se rend compte de la lacune qui existe au pays pour des dentistes; on a établi une politique pour les services de santé dentaire de l'avenir; plusieurs autres questions ont été aussi réglées. La réunion annuelle de 1954 aura lieu à St-André-sur-Mer, N.B., du 1er au 8 septembre.

Le Dr A. J. Coughlan promu à la présidence

A la réunion annuelle de l'Association, tenue à l'issue du dîner du lundi, 19 octobre à Montréal, le Dr A. J. Coughlan de St-Jean, N.B., s'est vu confier la présidence pour 1953-54. L'élection des officiers avait été faite le samedi précédent, quand le Dr P. G. Anderson, de Toronto, avait été nommé président-élu et les Drs R. R. McIntyre, de Calgary, et A. G. Racey, de Montréal, membres de l'Exécutif.

Nomination de membres honoraires

Les Drs Ernest Charron, de Montréal, A. L. Walsh, de Montréal, et H. Parker Buchanan, secrétaire de l'Association dentaire britannique, ont été nommés membres honoraires de l'Association dentaire canadienne. En conférant ces diplômes, le président, le Dr Ratté, souligna les nombreuses années consacrées au service de la profession par les Drs Walsh et Charron. Il tint à dire que l'A.D.C. apprécie les nombreux services de l'Association dentaire britannique, qui sont offerts par son secrétariat, dont le Dr Buchanan est en charge. Ce dernier diplôme a été conféré "in absentia."

Témoignage de gratitude aux rédacteurs sortant de charge

Au cours d'une séance du Bureau, les Drs Garvin et Marshall ont été l'objet d'une manifestation d'estime pour les services rendus au Journal depuis le début de sa parution. On offrit aux deux anciens rédacteurs des morceaux d'argentiers gravés. Le Dr Ratté, président, offrit les vœux au Dr Garvin et le nouveau président, le Dr Coughlan, le fit pour le Dr Marshall.

L'Association dentaire canadienne endosse la fluoruration

La résolution officielle de l'Association, adoptée au sujet de la fluoruration des eaux des aqueducs, est la suivante:

- "Attendu que la carie dentaire dont souffrent la grande majorité des habitants du Canada, est reconnue comme un des problèmes de santé les plus importants de notre époque;
 - Et attendu que plusieurs milliers de Canadiens et que des millions d'autres personnes à l'étranger ont bu durant toute leur vie de l'eau contenant des fluorures, à raison d'une partie de fluor pour un million de parties d'eau, à l'état naturel, et qu'ils ont, de ce fait, bénéficié d'une réduction de la carie dentaire dans la proportion des deux tiers, sans souffrir de dérangements organiques, de l'avis des professions médicale et dentaire;
 - Et attendu qu'on a étudié le problème depuis plus de huit ans, d'ajouter du fluor aux eaux des aqueducs, à raison d'une partie par million et que cette étude a porté sur l'influence dentaire et médicale de cette méthode;
 - Attendu que toutes ces études ont révélé les mêmes avantages dentaires que ceux donnés par l'eau contenant naturellement du fluor, tels qu'on les connaît depuis au-delà de 20 ans, avec la même absence de toute complication organique;
- Il est résolu:

QUE l'A.D.C. recommande à la population du Canada résidant dans des municipalités dotées d'un système d'aqueduc, d'adopter une formule pour fluorurer l'eau qui s'adapte le mieux à leurs besoins locaux, et de consulter à cet effet les autorités dentaires et médicales, et de génie, compétentes dans ce domaine."

Plan d'assurance-pension de l'A.D.C.

Avant que le plan d'assurance-pension de l'A.D.C. été approuvé par l'Exécutif, ce plan avait subi la critique d'actuaire compétents. Une fois que le plan eut été en force un an, l'Exécutif a décidé de le faire examiner de nouveau par de nouveaux actuaire. Le rapport des actuaire vient d'arriver au secrétariat général.

Voici les conclusions tirées de ce rapport par l'Exécutif:

1. Le plan d'assurance-pension de l'A.D.C., comme l'indiquait une première analyse, entreprise par des actuaire dont les services avaient été retenus par l'Exécutif de l'A.D.C., s'avère parfait sous tous rapports.
2. Les taux sont plus bas pour les mêmes bénéficiaires que ceux que peut obtenir un dentiste, individuellement, n'importe où.
3. Les taux sont calculés sur la même base actuarielle que les taux des autres assurances; les frais d'administration peu élevés et l'absence de commission payée aux agents sont responsables de la modicité des taux.
4. Il n'y a pas de clause douteuse dans ce plan.
5. Il n'y a aucun doute quant à la sécurité de la police; chaque police constitue un contrat individuel avec un particulier et se trouve ainsi à protéger cet individu.
6. On conseille à l'Association de tout mettre en oeuvre pour que le plan dure parce qu'il est très avantageux pour ses membres.
7. On dit que le succès du plan est conditionné par la coopération et le support de l'Association.
8. On recommande certaines modalités pour le bon fonctionnement du plan. On peut résumer cette question en disant que ces modalités doivent reposer sur un niveau élevé d'éthique professionnelle, en rapport avec la profession, plutôt que sur les méthodes ordinaires de la vente d'assurances.

En conformité avec ce rapport, le Bureau des Gouverneurs réapprouve le plan en passant la résolution suivante:

"Attendu que la Cie Wyatt a confirmé des constatations faites précédemment, Attendu que les membres de la profession ont accueilli favorablement ce plan; Attendu que ce plan confère de réels avantages aux membres, il est résolu: QUE l'Exécutif trouve des moyens d'en faire profiter les membres, en y apportant leur collaboration, pourvu que ces moyens restent en conformité avec le caractère professionnel."

Politique de l'A.D.C. au sujet des services dentaires de santé

Le Comité d'Etude sur l'Assurance-Santé a présenté la déclaration suivante, qui a été adoptée:

"L'Association dentaire canadienne est prête à collaborer à tout projet raisonnable en vue d'améliorer la santé dentaire au Canada. Cette déclaration veut dire que l'Association endosse tout projet renfermant les conditions réalisables en rapport avec les facilités et le nombre de dentistes disponibles. Cette Association n'approuvera pas un projet dont les modalités paraissent irréalisables.

Au Canada, l'extension des services dentaires n'est pas facile. Le nombre des dentistes est insuffisant et les facilités d'enseignement propres à accroître le nombre de dentistes sont déficientes. Il faut élever le niveau de l'appréciation des services dentaires, de la part du public, par une campagne intensive d'éducation en hygiène dentaire, de façon à assurer le succès de tout projet du genre. Il faut trouver un support financier à la recherche dentaire. Ces deux facteurs, éducation en hygiène et recherche, sont indispensables au succès économique d'un projet et à l'amélioration de la santé dentaire.

L'amplitude du travail dentaire à réaliser n'est généralement pas comprise du public, puisque 100% de la population souffrent de pathologie dentaire sous une forme ou sous une autre. Des études récentes indiquent qu'il faut 8.1 heures pour réhabiliter l'appareil buccal des recrues de l'armée. Le Canada a environ 5000 dentistes et une population de 14 millions de personnes. Cette population augmente constamment. On ne peut augmenter le nombre de dentistes, à moins que les facultés dentaires du pays puissent amplifier leurs facilités d'enseignement. Même si cet aspect du problème était réglé, cinq ou six ans seraient exigés pour augmenter d'une façon appréciable le nombre de praticiens.

En vue de cet état de choses, l'Association dentaire canadienne recommande un programme intensif de prévention.

1. *Recherche*: — On note des signes encourageants dans le domaine de la recherche dentaire. Cependant les possibilités, dans ce domaine, ont à peine été explorées. Ces dernières années, des recherches entreprises sur certaines questions ont ouvert un champ d'action des plus vastes. Les recherches ont besoin surtout d'appui adéquat.
2. *Education en hygiène dentaire* — On dit parfois que la population est trop instruite pour les moyens dont elle dispose; la vérité est que si la population était mieux éduquée, il lui en coûterait moins cher. Récemment, un administrateur du projet le plus développé à date en hygiène dentaire, disait qu'il ne servait à rien de prodiguer des services dentaires si la population ne les appréciait pas à leur pleine valeur. En tant que les services dentaires sont concernés, la perte pécuniaire entraînée par des services à ceux qui ne les apprécient pas, est déconcertante. Si on veut que tout projet aboutisse au succès, il faut commencer d'abord par faire l'éducation du public avant d'y inclure les soins.
3. *Soins dentaires*—L'amélioration de la santé représente le résultat de tout service de santé. La prévention est le dernier mot de la santé moderne. Si on prend en considération le nombre de personnes intéressées et celui des dentistes disponibles, et la fréquence des maladies, cette Association croit que le seul moyen de régler le problème dentaire est de s'occuper de la jeune génération. En concentrant nos efforts à traiter cette partie de la population, en intensifiant les recherches et en réalisant des programmes en hygiène dentaire, nous croyons que nous pourrions améliorer réellement la santé dentaire.





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Le comité de rédaction de la section française du Journal de l'association canadienne offre à tous ses lecteurs ses souhaits de bonne et heureuse année.

Réunion 1953 du Bureau des Gouverneurs

Les délégués des provinces du Canada se réunissent en assemblée générale, une fois par année, à l'occasion du Congrès de l'Association dentaire canadienne. Cette agglomération des représentants provinciaux s'appelle le Bureau des Gouverneurs.

Cette année, les délégués des dix Collèges provinciaux (membres corporatifs) ont siégé à Montréal, au milieu du mois d'octobre, en compagnie de présidents de comités d'études, qui ne sont pas nécessairement délégués officiels de leurs organismes provinciaux.

Au cours de ces réunions, les dirigeants de la profession dentaire canadienne établissent la politique de l'Association au sujet des problèmes, qui se présentent sans cesse à son attention. Selon les circonstances de l'heure, le Bureau des Gouverneurs est appelé à adopter une attitude ou à prendre des décisions sur telle ou telle question.

Cette année, une question qui a surtout attiré l'attention de l'assistance était la tenue d'une enquête sur l'aspect économique de la profession dentaire. Tous les ans, le Ministère du Revenu national fait connaître à la population les chiffres rapportés comme revenus par les différentes classes de métiers ou de professions au Canada.

A l'aide de ces chiffres et de ceux qu'elle recueillera chez les dentistes au sujet de leurs dépenses détaillées de bureau et des honoraires perçus pour tous les genres de traitements, l'Association, en regard des revenus moyens des citoyens du pays, pourra juger de la valeur d'une observation souvent entendue, à savoir que les soins dentaires coûtent trop cher pour que la majorité puisse se les payer. Une enquête économique du genre pourrait, de plus, fournir une foule de renseignements fort utiles pour l'établissement d'assurance-maladie pour des services dentaires. Cette compilation, que se propose l'Association, ne pourra se faire sans la collaboration de tous les dentistes et ne donnera des conclusions précises que si elle s'étend sur plusieurs années et si elle est menée par des spécialistes dans ce genre de travail.

Une autre question, qui a retenu l'attention des délégués, est celle de la fluoruration des eaux de consommation. Jusqu'à maintenant, jusqu'à ce que des recherches entreprises dans ce domaine aient donné des résultats définitifs, l'Association avait refusé son approbation officielle; elle avait évidemment favorisé cette mesure, mais elle n'avait donné son adhésion formelle.

La réunion des Gouverneurs de 1953, à l'exemple d'un grand nombre d'organismes scientifiques canadiens et américains, a endossé la fluoruration, comme étant une mesure bienfaisante pour les dents et dénuée de tout effet nocif sur l'ensemble de l'organisme.

Un problème, qui confronte nos dirigeants et qui ne semble pas avoir d'issue immédiate, est celui du nombre des dentistes au Canada. Nous manquons de dentistes et la situation s'aggrave d'année en année. Les facultés dentaires fonctionnent à plein rendement et les nouveaux diplômés suffisent à peine à combler les vides créés par les décès et les retraites. La population augmente à un rythme accéléré et elle s'éveille de plus en plus aux possibilités des traitements dentaires. Les campagnes en hygiène dentaire entreprises depuis des années, quoique incomplètes et incoordonnées, commencent à porter des fruits. La population exige des services dentaires et elle ne peut les obtenir, faute de dentistes en nombre suffisant.

La situation est grave. Et il faut craindre, qu'en face de cet état de choses, le gouvernement ne règle le problème à sa façon, sans tenir compte des conceptions professionnelles des dentistes. L'Association a étudié sérieusement ce problème et a pris des décisions d'importance à ce sujet.

Cette réunion du Bureau des Gouverneurs a, de plus, étudié une foule d'autres questions et il serait trop long d'énumérer ici toutes les décisions, qui y ont été prises.

Pour se tenir au courant des problèmes, qui confrontent actuellement la profession dentaire canadienne, les dentistes feraient bien de lire attentivement les *Délibérations* de l'A.D.C., qui leur parviendront bientôt; dans ce petit volume, est exposé en détail tout le travail réalisé durant l'année par les différents comités d'études de l'Association et les décisions prises officiellement au cours de la réunion d'octobre.

L'Association prend la peine et fait des déboursés considérables pour que ces *Délibérations* soient traduites et imprimées en langue française; il faudrait donc que nous prenions connaissance des problèmes qui nous intéressent et des solutions que propose notre Association.

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